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Vol. 160, No. 10

for patients who expect MIRACLES

The prompt relief from hemorrhoidal pain and inflammation afforded by 'ANUSOL'* Hemorrhoidal Suppositories does seem miraculous. Some patients, however, expect even greater miracles: as soon as they are symptom-free, they expect to keep their new-found comfort without any further attention.

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'ANUSOL' Hemorrhoidal Suppositories make patients comfortable quickly without the use of opiates, or local anesthetics. Their soothing, pain-relieving effects are due entirely to efficient reduction of inflammation and congestion; they cannot mask serious rectal disorders.

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An amino acid product your patients will like to take

Vipeptolac
PROTEIN HYDROLYSATE COMPOUND
Wyeth
Milk protein with lactalbumin, carbohydrate, vitamins, iron and saccharin (nonnutritive artificial sweetener), chocolate flavored.
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Total nitrogen	7 %
Amino acid and polypeptide nitrogen	3.6%
Carbohydrate	37 Gm.
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Phosphorus	1 %
Sodium	0.35%
Moisture	2 Gm.
Vitamin A	8000 U.S.P. units
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Excerpts from a recent study entitled, THE MECHANISM OF AMPHETAMINE-INDUCED LOSS OF WEIGHT: A Consideration of the Theory of Hunger and Appetite —by Harris, S. C.; Ivy, A. C., and Searle, L. M.: J. A. M. A. 134:1468 (Aug. 23) 1947.

experiment 1. Does Dexedrine Sulfate, by controlling appetite, decrease food intake and body weight in human subjects?

results ". . . our obese subjects lost weight when placed on a diet which allowed them to eat all they wanted three times a day . . ."

experiment 4. Does the rather prolonged administration of Dexedrine cause any evidence of disturbance of tissue functions?

results "No evidence of toxicity of the drug as employed in these studies was found . . . no evidence of deleterious effects of the drug was observed."

Dexedrine Sulfate

for control of appetite in weight reduction

(dextro-amphetamine sulfate, S.K.F.) Tablets Elixir

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OCTOBER, 1947

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Leprosy in India

The myth that leprosy is an incurable disease has been eliminated according to Major Hilda Plummer of the Salvation Army who recently returned to this country after spending fourteen years organizing leprasariums in India. It has been found that if the disease is discovered early enough patients can be cured and that hundreds of former patients who report to Indian hospitals for regular check-ups have shown no recurrence of leprosy.

The most successful treatment in India according to the Major is the intra-muscular injection of chalmuga oil. Advanced cases of the disease, where tissue or organs have been seriously affected respond to the chalmuga treatment, but rarely can be cured. However, there are few recorded cases of patients dying from the disease itself, however impaired their activities become. Death usually comes from some other disease after resistance has been lowered. For this reason all leprosaria face the growing necessity of being prepared to treat other diseases which can become fatal in advanced cases of leprosy, or Hansen's disease, as it is known medically

However, much psychological harm has been done in India as elsewhere by the use of the terms leper and leprosy, accepted in the public imagination as marking one of the most deadly and horrible of human diseases and leading to social ostracism for many people.

While the histology of the disease is still obscure it has been proved that dirt, squalor, racial or hereditary background are not deciding factors, despite popular public opinion. Moreover, few doctors and nurses in leprasaria have ever been infected by the disease, and in no case has infection of medical personnel been traced to contact with diseased patients.

There is no segregation of patients in Salvation Army leprasaria from contacts with people from the outside world. When infection has disappeared and no further signs are evident they are given symptom-free certificates and allowed to return to their normal occupations, returning at six-month intervals for medical check-ups.

Clinical services for persons in the early stages of the disease, are also maintained and many cases are treated in the patient's home, where the family segregates them. The advantage of home treatment is that the patient's morale is kept at a high peak with the best of family care, while danger of infection to other members of the household is not serious.

Relatives or children of patients are also allowed to live in separate buildings near the hospital compound so there can be regular family intercourse. Schools and workshops are maintained for them, as well as for patients inside the hospital. The latter are limited to two hours of manual labor each day to keep them in good physical condition without tiring them.

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Open Forum

Routine Government Report

T. SWANN HARDING
Falls Church, Va.

The following is quoted from the introduction to the annual report of the Food and Drug Administration, Federal Security Agency, for the fiscal year 1946:

"A governmental report traditionally is not expected to be sensational. Yet there is inescapable drama in the day-to-day enforcement of a law like the Food, Drug, and Cosmetic Act.

"Flood waters sweep down an eastern river valley and squads of city, State, and Federal inspectors converge on the flood areas to guard the populace against consumption of storm-water-polluted foods and drugs; a worker's mind wanders, the labels are switched on bottles of two very useful drugs, and only the providential sampling of the mislabeled shipments and their identification in the laboratory prevent tragic results; a mouse drowns in a milk vat in a cheese factory, serious illness results in two States, and the manufacturer faces a criminal prosecution; in other States groups of consumers are made seriously ill and the manufacturer of a fruit beverage is fined $5,000 for using a poisonous preservative; a gadgeteer produces a contraption of colored lights to cure all diseases and the full power of the Federal government is brought into play to protect his gullible victims."

These are just everyday incidents along the way and sometimes one wonders why so much money is expended for the protection of people so careless and so gullible. For it must have taken a quarter of a million dollars and many years work for government agencies to rid the market of the therapeutic contraption consisting of colored lamps, yet it was plainly farcical and its exploiter could surely have fooled only the most credulous.

This year streptomycin, produced by a biological process similar to that used for the production of penicillin, required attention. Last year the penicillin amendment to the law, signed July 6, 1945, enabled the Food and Drug Administration to cope with problems presented by that drug. Streptomycin can be quite dangerous if impure and often it is unavoidably impure. It also requires pretesting by law, and eventually that will necessitate an additional amendment to the Food, Drug, and Cosmetic Act.

One of the most common violations in 1946 was the resort to poisonous preservatives to check the decomposition of foods though the use of such preservatives could largely have been avoided by proper plant sanitation. Perhaps the worst of these preservatives was a fluorine compound, poisonous hydrofluosilicic acid, which turned up in beer. Another objectionable preservative, monochloracetic acid, was causing vomiting and serious illness on the part of those who consumed certain orange beverages. To control this, telegrams had to be sent by one orange-concentrate maker to five hundred firms all over the country and all sirups and concentrates containing the preservative were destroyed.

Other foods seized in 1946 because of the presence of monochloroacetic acid included pancake sirups, chocolate flavoring sirups, salad dressings, fruit-type beverages, and chow-chow relish. Such actions, together with those against socalled "beverage stabilizers" containing the same deleterious ingredient, aggregated over a hundred. Fermentation inhibitors, which contained monochloroacetic acid but were labeled as nonpoisonous or harmless were also found. These were declared misbranded and poison labels affixed, whereupon prospective consumers demurred and were then offered the same monochloracetic preparations under other names and lacking the poison label. Or else they got preparations containing a quaternary ammonium compound which is also deleterious. Constant vigilance was obligatory in this field.

The occurrence of mineral oil in foods also occupied attention. One flagrant substitution of mineral oil for vegetable oils involved the use of more than a tablespoonful of mineral oil per package of popped corn. The manufacturer had used over 750,000 pounds of mineral oil in popcorn distributed all over the U. S. Mineral oil is a deleterious substance in food as it renders the food injurious to health, and the courts so held. Use of the oil causes nutritional loss of essential vitamins and other harmful effects.

Certain manufacturers were also caught using the oil in salad dressings and similar preparations, some recommended for dietary use even when packed in gallon containers suitable only for restaurant use! This abuse, under the guise of controlling the individual's caloric intake, was proscribed. At least nineteen firms engaged in this business in the New York area were compelled to discontinue it. In 1946 there was a total of one hundred and sixty-five seizures of food containing mineral oil.

Examination continued of whiskies, brandies, wines, and other liquors for slivers of glass in bottles, but detentions dropped to 5 percent of the total lots examined, showing a progressive correction after the 25 percent found in 1945, and 70 percent in 1944. Such slivers result from defective or carelessly handled bottles. The lead was lower than usual in maple sirup and in imported sardines. Stones or other dangerous or nonnutritive substances, often hazardous to the teeth, were found in canned dried beans and peas. A fine of $1,000 was assessed a manufacturer whose carelessness in storing borax near salt resulted in his canned peas containing considerable quantities of the former.

There were the usual contaminated sea-food

and food-poisoning investigations which crop up every year. One outbreak of the latter was traced to ground ham contaminated in preparation and improperly refrigerated, and several other cases simmered down to carelessness in the preparation, handling, or refrigerating of highly perishable food products.

It sometimes seems that those who handle and prepare food are the least qualified to do so. Aside from that, food adulterations involving the most disgusting filth and decomposition turn up every year, though many entire food industries are tackling this problem now, and many food concerns employ technically trained people to guard sanitary practices. Others however, continue to use unfit or contaminated raw materials or to give sanitation minimum attention, and many food warehouses are filthy.

Inspectors also have to make frequent field investigations of farms, wharves, orchards, and warehouses to study raw materials. The courts are not at all disposed to condone either the shipment of insanitary food or failure to protect sound food in warehouses or other storage. Terminal contamination by rodents and insects continues, however, to be a common cause of losses of cereal products like flour and corn meal, brewers grits and popcorn. Ultraviolet light is now being used to detect rodent urine on flour bags. But tragic waste occurs for these reasons right amid a worldwide food shortage. Many makers of bakery goods are incredibly indifferent to rudimentary sanitary and hygienic practices.

One prominent Washington pie foundry had practically to be closed out for persistent inattention to conditions of filth and carelessness which would have offended any moderately competent housewife. Yet people who exercise extreme care in their own homes purchase and consume, quite innocently of course, the products from such unspeakable establishments. Again, some concerns did not hesitate to rework candy returned because it was unfit and after it had been further contaminated with dust, rodent excreta, and so on. Some went out of business or discontinued interstate shipments to evade the law. During 1946 there were 87 seizures of filthy candy.

One manufacturer lost $100,000 worth of contaminated chickle and another was producing one and one-half million pounds of mincemeat a year in a factory found to be heavily infested with rodents. There was much unfit canned paste, pie filling, fruit puree, marmalade, and mincemeat.

Among the economic cheats of the year were maple sirup consisting of artifically colored and flavored ordinary sugar sirup; black pepper containing buckwheat, cottonseed hulls, and soybean meal; horseradish with a high parsnip content; stock feeds containing less protein than

. . . to relieve the strain of

CHRONIC IRREGULARITY

WHEN aberrations of the menses suggest that normal function has overstepped the bounds of physiologic limits—the physician is often confronted with a condition which proves highly distressing to the patient. For such cases (as in amenorrhea, dysmenorrhea, menorrhagia and metrorrhagia), many physicians rely on Ergoapiol (Smith) with Savin as the product of choice. By its unique inclusion of all the alkaloids of ergot (prepared by hydroalcoholic extraction), and the presence of apiol and oil of savin—Ergoapiol (Smith) with Savin provides a balanced and sustained tonic action on the uterus, affording welcome relief in many functional catamenial disturbances. It produces a desirable hyperemia of the pelvic organs, stimulates smooth, rhythmic uterine contractions, and also serves as an efficient hemostatic and oxytocic agent. General dosage: 1 to 2 capsules 3 to 4 times daily.

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3 significant Fractions of Liver

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80% ALCOHOL-INSOLUBLE

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IMPORTANT CRYSTALLINE B VITAMINS

Current laboratory and clinical investigations show that a combination of the aqueous *and* lipoid fractions of liver, providing more complete nutritional therapy, is clinically superior to aqueous extracts alone . . . since certain essential nutritional factors are removed in the preparation of the usual aqueous liver extracts.

Provides in each capsule the vitamin extracts and concentrate (water-soluble, 80% alcohol-insoluble and lipoid fractions) derived from a total of 11.5 grams of liver . . . including folic-acid fractions (L. casei factor [Bc] etc.), biotin , inositol, and other nutritional factors present in the liver fractions. Each capsule contains:

Thiamine HCl (B_1)	2.0 mg.
Riboflavin (B_2)	2.0 mg.
Niacinamide	10.0 mg.
Pyridoxine HCl (B_6)	0.1 mg.
Calcium Pantothenate	3.0 mg.
Choline	10.0 mg.
Inositol	5.0 mg.
Folic-acid fractions	10.0 mcg.

Professional Samples and Literature

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the labels said; low-fat and short-weight butter; low grade canned fruits and vegetables which failed to bear the required substandard legend on their labels. One packer was fined $1,000 for shipping canned peas that were so hard they would bounce clear out of a No. 2 can when tossed into it!

The misbranding of medicines with false curative claims on the carton and bottle labels has been pretty thoroughly corrected. Those who now attempt to misrepresent such products use circulars which can be stored inconspicuously in separate packages until they are brought out together with the medicine on the dealer's counter, if he is unscrupulous enough to stoop to this. Oral promotion also is depended upon. Numerous items were seized in 1946 which had been promoted by lecturers operating through socalled "health classes" in hotel ball rooms or by pitchmen in chain variety stores. They combined talks on physical well-being with sales of their wares for serious illnesses not mentioned on the labels.

However, there were 14 criminal prosecutions of druggists and 2 injunctions for selling prescription drugs in violation of the law, usually sulfonamides, thyroid, barbituates, or penicillin. But the percentage of retail druggists who violate the law thus is small.

A majority of the cosmetics seized contained illegal coal tar colors on which certification had been refused because of their dangerous properties. These included wave sets, an ingredient for use in creams, and a new hair dressing. Two criminal prosecutions were instituted. The shipper of a shampoo containing excess alkali, which resulted in a number of injuries, was fined $1,000. Total seizures of foods, drugs, cosmetics, and caustic poisons came to 2,835. Fines imposed amounted to $166,746, and jail sentences were imposed on 14 individuals.

But the public readily paid $300 for a device consisting of a very small glass tube in a metal container about the size of a pencil. The tube contained a little barium chloride, which was purported to be radioactive and to cure anything. It was to be hung around the neck. The public also bought a $6,500 body-shaker for the treatment of a variety of diseases, and an exerciser said to contain "dancing atoms" which effected weight reduction, and cost $1,840. As one woman said of one fake device: "It helped me. It helped my husband. It helped my mother. She died last week." So what? She had a crude device worth nothing, but she had paid plenty for it and became hysterical at the prospect of its loss.

Granite Gables

Gentle, prolonged sedation...
PEACOCK'S BROMIDES
affords the gentle, prolonged sedation indicated in insomnia, hysteria, epilepsy, and the various neuroses.
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Each teaspoonful contains 15 grains of pure bromide salts
Peacock's BROMIDES

Nutrition And Dental Caries

In a recent issue of the Yale Journal of Biology and Medicine, Dr. Bert G. Anderson, a dentist and associate professor of surgery at the Yale School of Medicine, challenged claims that faulty nutrition is responsible for widespread dental disease. At the same time he questioned the correctness of claims that the condition of American teeth is growing worse because of the advance of industrialization. In his opinion there is not sufficient evidence to support the all too prevalent belief that nutrition controls the occurrence of cavaties or that dental caries is more prevalent now than in times past.

After examining reports by three European travelers of Colonial times Dr. Anderson found that despite the absence of refined flour and sugar in early American diets (two items which many contemporary authorities believe responsible for tooth ailments) a great many of our Colonial forebears lost their teeth early in life.

While recognizing that diet may be a contributing factor in the causation of dental disease it is his belief that little if any scientific data has been found to support the statements of those who claim that common gingivitis is the result of Vitamin-C deficiency, or that dental caries can be controlled by altering the nutrition of the tooth.

There is, however, according to Dr. Anderson, reasonably good evidence drawn from both experimental study and experience in practice, to support the theory that fermentation by bacteria of carbohydrate foods lodged on the surface of the tooth plays a conspicuous role in the initiation of dental caries as well as in the progressive destruction of tooth substance by this process. It is also recognized that decomposing food or other deposits on the surface of the tooth in contact with the gingiva may cause irritation, ulceration and later, progressive destruction of the supporting tissues of the teeth.

Heart Ailments On Increase

Speaking at the closing session of the New York State Health Conference at Saratoga Springs recently, Dr. Leon Sternfield, director of the State Health Department's Division of Medical Rehabilitation, said that chronic disabling diseases, especially heart ailments, are rising rapidly. Dr. Sternfield described degeneration of the heart, blood vessels and nervous system as typical chronic disabling diseases undergoing "an accelerating increase". It was his opinion that the "term rehabilitation is used for activities that aim at the conservation of human resources and such conservation is increasingly needed".

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Apply daily after a mild soap bath and thorough drying. A thin, invisible, economical film suffices. No bandages necessary. After a week, adjust to the patient's progress.

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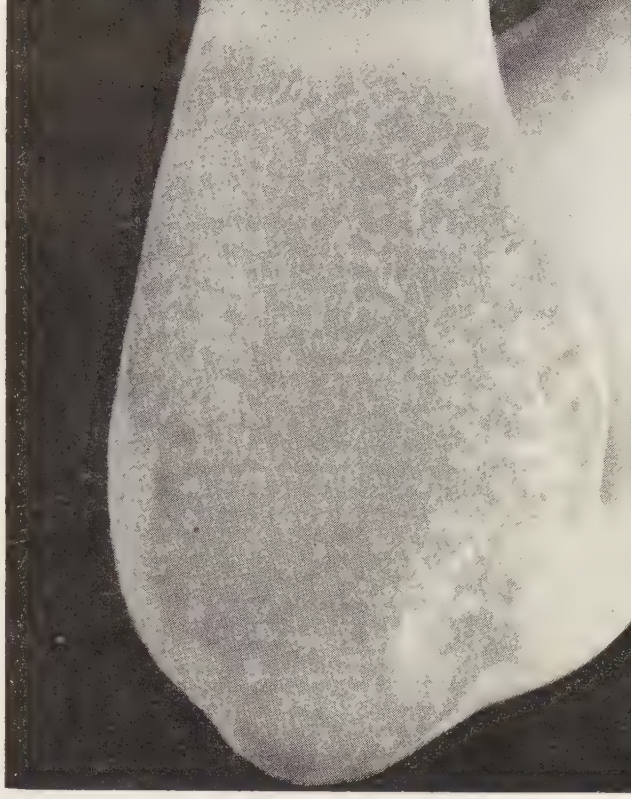

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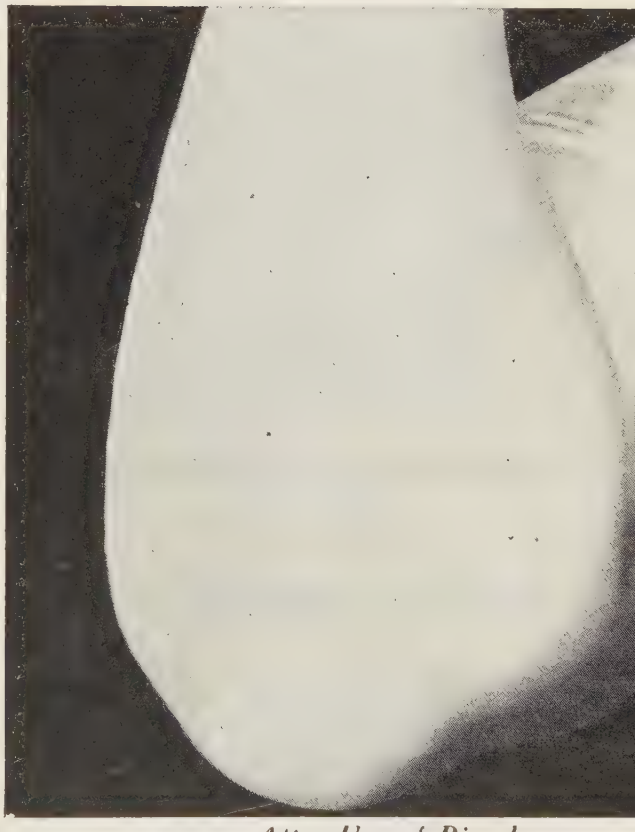

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Business Holds Medicine's Future

Business and industry must assume an increasing financial responsibility for the nation's medical schools if the United States is to maintain its leadership in health control, Chancellor Harry Woodburn Chase, of New York University recently told leading business men in New York.

He reminded his hearers that the average medical school in the United States is faced with the problem of increasing student bodies, without a corresponding increase in income. Obviously, unless business and industry assume their responsibility it will be impossible to maintain a standard of instruction without the assistance of tax funds, which might eventually lead to government control of health and medicine.

In support of his statements, Chancellor Chase quoted figures showing that of the total of $43,000,000 that will be needed to operate the medical schools of this country in 1948, student fees will provide no more than $12,000,000 and probably less. The remaining $31,000,000 will be obtained from income from endowments, general university funds, appropriations from tax funds, gifts and similar sources. It was his view that the proposed New York University-Bellevue Medical Center is medicine's answer to the challenge of the future, not only of this city and country, but the world. The nation's business is being threatened by an $8 billion loss due to absenteeism through sickness. Business and industry cannot afford to dodge this threat to its well-being.

Preventing the Common Cold

According to Schering Corporation, Bloomfield, New Jersey, encouraging results in aborting incipient common colds have been reported by Doctor David Haler, honorary pathologist of All Saints Hospital, London, England, by use of a spray of Sodium Sulfacetimide. Since 1942, Dr. Haler states in *The Medical Press*, 216:324 (1946), several hundred patients have been treated with successful inhibition of the normal invaders of the nasopharynx in at least eighty percent of the cases. The treatment does not affect the course of an established cold. No local sensitization or sulfa-resistance was noted.

In treatment a liberal local application of a spray consisting of Sodium Sulfacetimide ten percent to which had been added a wetting agent to facilitate penetration into the mucosa, was used. Each nostril and the nasopharyngeal region were sprayed immediately, repeated every three or four hours for several applications, and accompanied by ascorbic acid in large doses for its non-specific antibody effect.

Sodium Sulfacetimide, the active sulfa drug which is also known as Albucid Soluble, is available in thirty percent solution and has been proven to be the treatment of choice in acute or chronic infections of the eyes.

Before the Patient Becomes Seriously Ill

The use of GRAY'S COMPOUND will save valuable time and effort in the restoration of your patient to his normal health.

Gray's Compound

stimulates the appetite and aids in the assimilation of nourishment. If the patient is "run down" from overwork, worry, seasonal colds and coughs, or suffers from the vague symptoms of old age and diminishing vitality, GRAY'S COMPOUND is usually indicated, and is a useful adjunct to such other medications as the case may indicate.

The active ingredients are: Extracts Gentian and Dandelion, Glycerine, Wine, Phosphoric Acid, Cardamom Comp. and Sugars.

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Pharmaceutical Achievements

Discussing a "Golden Dozen" pharmaceutical discoveries in the *Record of Chemical Progress,* Doctors Theodore G. Klumpp, president, and Justus B. Rice, vice-president and medical research director of the Winthrop Chemical Company note that the synthesis of penicillin was a notable achievement of 1946, but, believe it "extremely unlikely that synthetic penicillin will ever be able to compete with the product derived from mould, because of the astronomical quantities of the latter now made possible by mass production.

"The lowering of costs made possible by mass production methods from twenty dollars for a sufficient amount to treat a case of gonorrhea three years ago to only a few cents now puts penicillin within the grasp of every patient and although cost of streptomycin, another antibiotic, is still high, there has been a corresponding decrease, with further reductions in sight."

Listed as the twelve "golden" medicinal advances of 1946 are: radioactive isotopes, by-products of the atomic pile; two antihistamine drugs, pyribenzamine and benadryl, that "appear effective in controlling symptoms of hay fever and uticaria"; the antibiotic, streptomycin, the value of which was "placed on a firm foundation in 1946"; cytochrome C, an enzyme, useful in such diverse disorders as various kinds of shock, angina pectoris, Raynaud's disease, barbiturate poisoning, pulmonary emphysema, degenerative diseases associated with arteriosclerosis and certain cerebral dysfunctions; rutin, a flavonol compound, derived from green buckwheat, found useful in diabetic retinitis; the metabolic agent, n-propyl thiouracil, that may prove to be "a really effective, safe, medical treatment for many cases of thyrotoxicosis"; dengue fever vaccine; mumps vaccine; the antimalarial aralen; the progress made in synthesis of compounds closely similar to vitamin A; the use of curare, the ancient Indian arrowhead poison, in anesthesia and in the treatment of conditions characterized by muscle spasm or spasticity; and, finally, advances made in cholera therapy, sharply reducing mortality by the use of sulfadiazine and sulfaguanadine.

* * *

Kaposi's disease, xeroderma pigmentosum, lichen rubra acuminatus is admitted to be identical with *Devergie pityriasis rubra pilaris,* and multiple idiopathic pigmented sarcoma, the description of which is beyond all doubt Kaposi's best work. Kaposi is accredited with the original descriptions of other diseases, as impetigo herpetiformis, pemphigus vegetans, which was misnamed syphilis vegetans, lupus erythematosus disseminatus, dermatitis papillaris capillitii and lymphangioma tuberosum multiplex.

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Critique

Diet and growth: An editorial from *J. A. M. A.* for September 7, 1929, discussed this subject. One of the questions raised was whether children who did not grow according to the established standards were doing right by themselves. Again: were body weight and body length the proper criteria of growth. What has occurred since then? Do doctors generally expect children to grow on diets good for rats at a rate consistent with established standards of body height and weight at different ages?

The menstrual function: **Medical Journal and Record** for July 17, 1929 commented editorially on the little that was then known about the concomitants of the menstrual function and why women are then touchy, cranky, and sensitive to all sorts of stimuli which do not ordinarily affect them. These moods and apprehensions could be regarded as the results of suggestion, but that merely leads the patient on from one physician to another. The conditions are real. Why not some research on the subject? Research subjects are unlimited—neurotic women abound. Was the research undertaken? What was the result? Is it still believed that the blood of a menstruating woman kills a growing bean plant whereas normal blood will not do so?

Organization of medicine: A common argument is that medicine is an art, not altogether a science. What is good for one man is injurious to another, and the doctor has to try the effects of this or that drug of known value on this or that individual, not always knowing his idiosyncrasies or normal reactions to stimuli. He does not know his patient as the old general practitioner knew his; though the latter had less science than his modern successor, he knew much more about the peculiarities of particular patients. Yet, complete patient records, accurately and conscientiously kept, and sent in duplicate to the next doctor, would eliminate a great deal of this failure to know the patient. The application of sound psychological and psychiatric principles in the approach to patient peculiarities would help. After all, as anyone who deals with great masses of people observes, human beings resemble one another. For instance, nine times out of ten, in picking an alias, the assumed name has a definite and known relationship to the real name. Doctors could practice in groups in such a way as to use each physician's special talents and abilities to the maximum, yet not neglect the patient as a whole being. Also, they should always have ample clerical facilities to maintain complete patient records so that, no matter to what physician the patient later goes, the next man or group would be fully informed of the patient's past medical history. Nor would this mean death to individualism and lowered physician income.

Milk: Unquestionably milk can be good food, for those with whom it agrees but, since man regularly drinks the milk of another and not closely related mammal, it disagrees with many people. One must always remember that the real Americans, the aboriginal Indians from whom less than half a million of us are descended—the others all being foreigners—had neither cows nor substitutes for cows until the Europeans brought them over here. Indian babies got no other milk if their mother's failed them. Indeed many Indians still find the very odor of cows and dairy products objectionable. Yet the natives were healthy specimens before they adopted the white man's food. The children were well, vigorous, happy, and rarely cried. Some Indian babies got raw meat, raw liver, and the fresh blood of wild animals—or even fingers detached from captured enemies as a sugartit! The last is not to be recommended for modern babies who are deprived of milk.

Like modern times? "At present, every trader in any degree of credit, every broker and attorney, maintains a couple of footmen, a coachman, and a postillion . . .The substantial tradesman, who was wont to pass his evenings at the ale-house for fourpence and halfpenny, now spends three shillings at the tavern, while his wife keeps her card-tables at home; she must likewise have fine clothes, her chaise, or pad, with country lodgings, and go three times a week to public diversions. Every clerk, apprentice, and even waiter of tavern or coffeehouse, maintains a gelding by himself, or in partnership, and assumes the air and apparel of a petit maitre—The gayest places of public entertainment are filled with fashionable figures; which, upon inquiry, will be found to be journeyman tailors, serving-men, and abigails, disguised like their betters. In short, there is no distinction or subordination left—The different departments of life are jumbled together—The hod-carrier, the low mechanic, the tapster, the publican, all tread upon the kibes of one another; actuated by the demons of profligacy and licentiousness, they are seen everywhere rambling, riding, rolling, rushing, jostling, mixing, bouncing, cracking, and crashing in one vile ferment of stupidity and corruption—All is tumult and hurry; one would imagine they were impelled by some disorder of the brain, that will not suffer them to be at rest. The foot-passengers run along as if they were pursued by bailiffs. The porters and chairmen trot with their burdens. People, who keep their own equipages, drive through the street at full speed. Even citizens, physicians, apothecaries, glide in their chariots like lightning. The hackney-coachmen make their horses smoke, and the pavement shakes under them; and I have actually seen a wagon pass through Piccadilly at the hand-gallop. In a word, the whole nation seems to be running out of its wits."—Conditions in London, as described by Tobias Smollett in *Humphrey Clinker*.

The Critic

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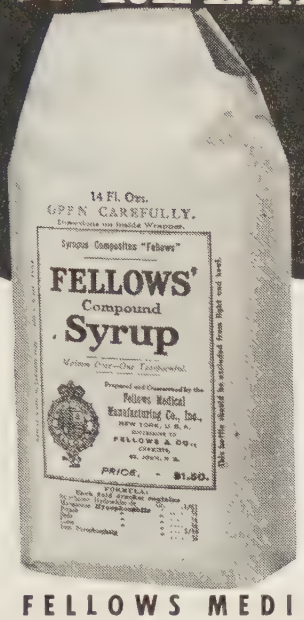

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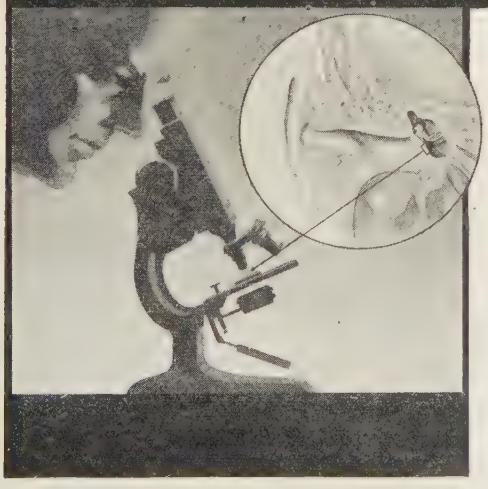

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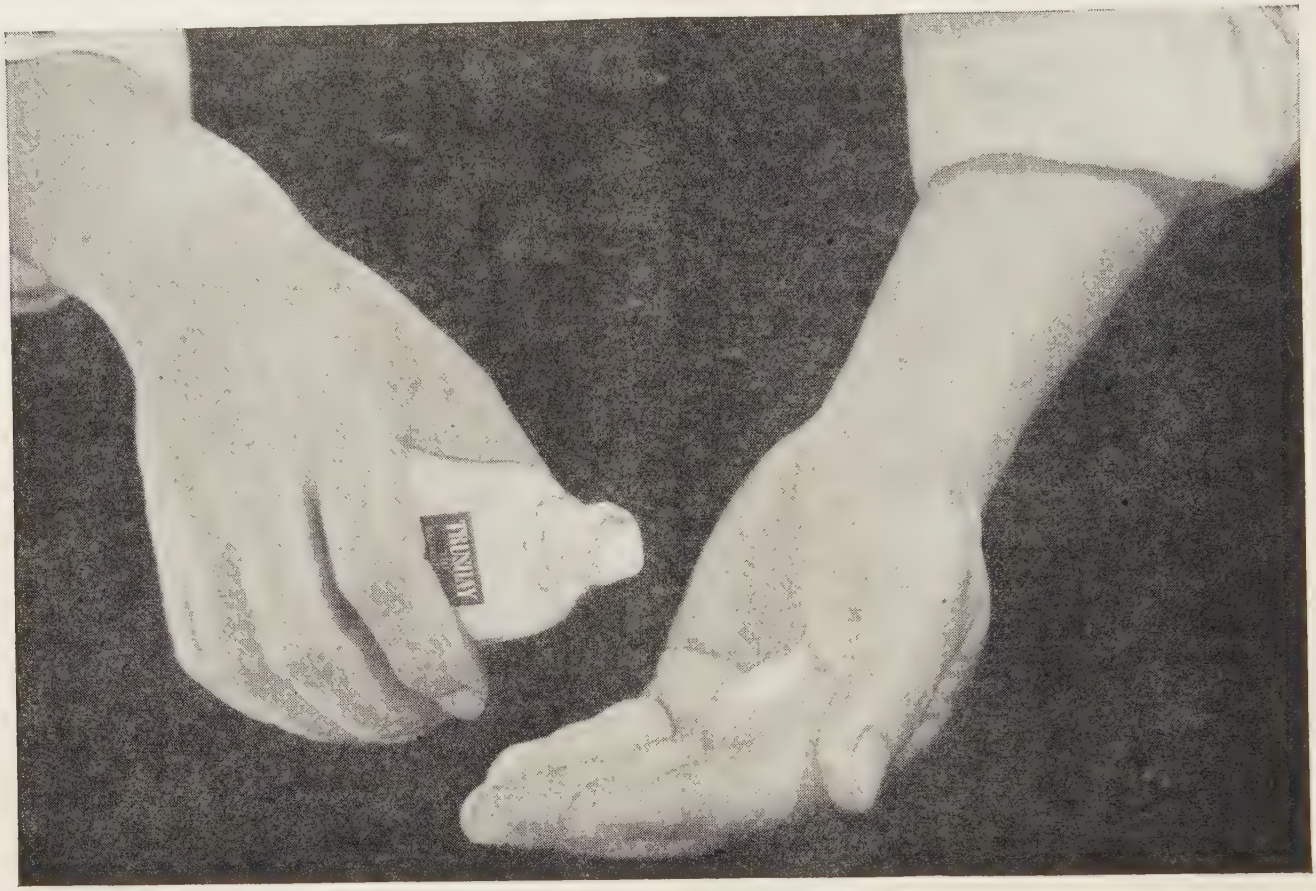

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PENICILLIN INHALATION THERAPY IN RESPIRATORY INFECTIONS

A New Efficient Ambulatory Method

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and JOSEPH GELEHRTER, M. D.
Philadelphia, Pa.

The use of inhalation methods for the treatment of respiratory conditions is assuming an increasingly important place in medicine. Literature is being accumulated by various investigators conducting experiments in an attempt to find a method that is foolproof, economical, easily manipulated, time saving and not distasteful to the patient. The greatest number of such experiments have been attempted with penicillin because of its effectiveness in so many respiratory infections, its economy, and its ease of administration. Methods employed in the inhalation of penicillin are numerous, namely: atomizers, steam atomizers, nebulizers, rebreathing apparatus, etc. The above mentioned can be used by attaching them to oxygen or other compressed gases, which can only be utilized in hospitals, physicians offices or homes of those fortunate enough to be able to afford such apparatus, or by hand compressed bulbs. Each type of apparatus has its inherent value depending upon the particular need and situation at hand.

The value of inhalatory methods depends upon bombarding the point to be attacked without causing reaction or irritation. The efficiency of treatment depends upon the ability to concentrate the medicament at the point of attack, whether it reaches there directly or indirectly through the circulation. It is known that for the treatment of bronchial conditions by inhalation the particle size of the mist produced is important. Particles of three micra and above are taken out by the trachea, bronchi, bronchioles and alveolar ducts, whereas particles between 0.6 microns in radius to 1.0 microns in radius are taken out by the lungs up to 97 percent. Particles of 0.3 microns in radius or smaller are retained only up to about 30 percent or less in the lungs. These findings, which have been reported by Findeisen (1) and confirmed by Van Wigh and Patterson (2) are also borne out by the experiences of Olsen (3, 4) and Abramson (5) and have important clinical significance. To reach and treat bronchial conditions locally, a mist of larger particle size is preferable such as is produced by an ordinary atomizer or certain nebulizers. Penicillin vapors of high concentration but of very fine particle size are of less value locally in these conditions. High penicillin blood levels through the circulation would be necessary to achieve the real effects of this therapy. However, the problem most concerned with in this article is the local effect of penicillin. Nevertheless, studies have been made showing that high and prolonged penicillin blood levels are obtained by inhalation methods. Thus a double attack of local and general concentrations of penicillin is produced by this particular method.

We have attempted to show by x-ray the location of nebulized particles in the broncho pulmonary system. Using a 10 percent solution of potassium iodide in a nebulizer* patients were instructed to inhale the mist produced and we were able to follow its progress fluoroscopically. X-rays were taken immediately after inhalation of the 10 percent potassium iodide solution to demonstrate its penetration into the broncho-pulmonary tract. (Figs. 1, 2, 3, 4.)

The 10 percent potassium iodide solution when nebulized produces a particle size ranging from 2.5 to 5 microns and roentgenograms show that the lung markings become more prominent throughout, with greater visualization of the bronchi. This demonstrates that the solution reaches the bronchi and is spread throughout the lungs.

A tablet of penicillin (nebutab)** dissolved in

* Premo Nebulizer supplied by Premo Pharmaceutical Co.

** Nebutab—a one grain tablet containing 50,000 units of crystalline Sodium Penicillin G. Supplied by Premo Pharmaceutical Co., New York.

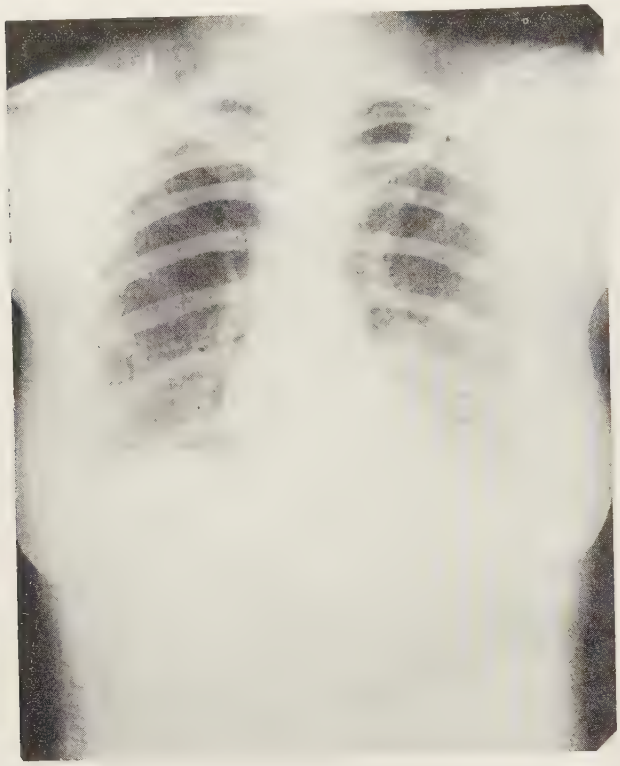

FIG. 1.—J. M. Increase in lung markings at both bases and right upper lobe. 4/2/47

1 cc. of water and nebulized with the same apparatus produces a particle size ranging from 2 to 3 microns. This is evidence that the mist produced reaches the same depths as the 10 percent K I solution.

In the earlier phases of this work the dosage of penicillin was small as compared to present dosage. This is true for all methods of administration. Hundreds and thousands of units of penicillin have been increased up to millions of units. With the smaller dosages many good results were obtained but with the larger dosages some of the failures have been converted to successes.

We must remember that penicillin is not the treatment for a particular disease but is the agent used to combat the bacterial cause of that disease. Penicillin is not the cure for pneumonia due to an organism that is penicillin resistant, such as influenza, or for any other diseases that we believe penicillin cures unless the particular organism responsible for the disease is susceptible to penicillin. Therefore, we must understand that penicillin is not a cure or even good treatment for bronchial asthma unless we can determine whether the asthma is caused or complicated by a penicillin susceptible germ. It is however, of great value in the treatment of asthma that is aggravated by penicillin sensative bacterial infection in that, 1. it eradicates or greatly reduces the infection making the other methods of treatment for asthma effective, 2. it is time saving and 3. it probably avoids irreversible pathological changes whereby chronic asthmatic states are produced. Penicillin is not to be used as a cure for a disease but as an attack upon a germ which may be the etiologic agent of that particular disease. With this in mind, attempts have been made to note the effects of penicillin inhalation therapy in the treatment of sinusitis, sinobronchitis, chronic bronchitis, bronchiectasis as well as bronchial asthmas which have been secondarily infected or primarily caused by penicillin sensitive bacteria. The results of treatment are based principally on clinical findings and interpretations rather than on laboratory findings although laboratory procedures are valuable in determining what results are to be expected by bacterial identification.

The laboratory findings do not always coincide with clinical records, because even if cultures taken before treatment are the same as those obtained after treatment, we cannot state we have failed if the patient is clinically improved. However, laboratory data does coincide with improved clinical results in many cases. Even so we should not be obliged to regard the laboratory result as infallible in reviewing the clinical improvements. Cultures revealing organisms that are not penicillin sensitive should be treated by other drugs or antibiotics as streptomycin, sulfonamides, urea peroxide, etc. (5)

In our opinion, the use of penicillin by inhalation should not be depended upon alone in

FIG. 2.—Same patient after inhalation of 10 percent potassium iodide solution, showing very prominent lung markings, particularly right upper lobe and both bases. The bronchi are visualized to a greater extent. 4/2/47.

pneumonia, lung abscess, etc., particularly when inhaled through the medium of hand compressed bulbs. The patient is too weak for such strenuous effort and valuable time may be lost before the patient learns to utilize the apparatus properly. In these acute toxic infections penicillin by hypodermic injection is to be preferred. However, inhalations of penicillin can be used as an important adjunct in these cases for it is in penicillin susceptible pulmonary infections, that penicillin by inhalation has its greatest value as it has also in chronic and acute sinusitis.

We have attempted to prove that inhalations of penicillin in proper concentrations and in a form that is able to reach the infected area is not only a good method of treatment but probably the best. By this method we produce local bacteriocidal and bacteriostatic effects as well as obtaining absorption of the antibiotic in the circulation to continue and prolong the effect. However, this method is not to be depended upon in obstructive lesions or in areas not penetrable due to mechanical difficulties.

A few investigators have proven that inhalation of penicillin has raised blood levels to such a degree as to be of excellent therapeutic value (6). The clinical effects of penicillin inhalation have produced striking results for many investigators (3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14). However, most of these have been obtained by the use of the Collison machine or other non portable apparatus. As described in a previous paper

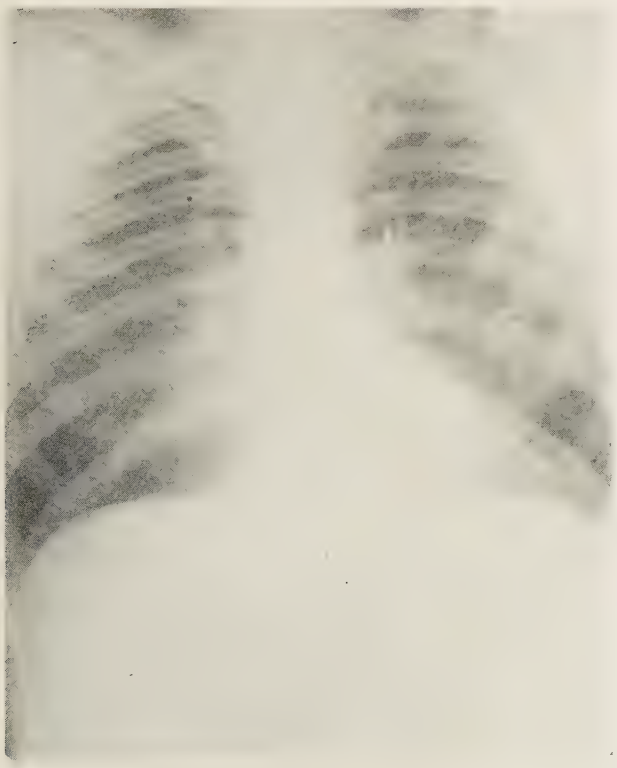

Fig. 4.—D. M. Prior to inhalation of 10 percent potassium iodide solution.

Fig. 3.—D. M. after inhalation of 10 percent potassium iodide solution.

(8) this type of therapy cannot be carried out efficiently by the patient who cannot afford such treatment or who must continue his work. The value of the ordinary atomizer in the treatment of chronic respiratory infections and in acute sinusitis was stressed. It was shown the patient could carry his atomizer and penicillin solution with him to work and derive benefits of apparently equal clinical effectiveness as those secured with the unwieldy and non-portable types of apparati.

Since the publication of that paper a new method has been developed whereby small tablets of penicillin (crystalline nebutabs) can be carried by the patient and dilutions made by him whenever treatment is needed. Each nebutab, the size of a one grain tablet, contains 50,000 units of sodium crystalline penicillin G. This is dropped into the nebulizer, 1 cc. of water is added, the tablet dissolves and the solution is ready for use. In use the hand compressed bulb nebulizer delivers a particle of 2 to 3 microns in size with sufficient velocity to reach the lower stem bronchi. Chest x ray plates were taken of several patients prior to nebulization. These patients were then instructed to use the nebulizer containing 10 percent of potassium iodide and x-ray plates were again taken immediately after nebulization. The x-rays taken after nebulization with the potassium iodide solution revealed marked increase in prominence of the hilar regions, visualization of the lower stem bronchi and an accentuation of the lung markings in general, extending in some instances as far as

the outer third of the lung. This evidence is sufficient to prove that the mist from the hand compressed bulb nebulizer used in this experiment is capable of reaching the main stem bronchi and many of its ramifications. (Figs. 1, 2, 3, 4.)

Treatment was instituted in selected patients most of whom in spite of rather severe chronic respiratory infections had to continue their work and remain in their usual environment.

The method was used on selected cases of bronchiectasis, bronchial asthma complicated by bacterial infection, asthmatic bronchitis, sinobronchitis, chronic sinusitis and acute sinusitis. These patients, except for those with acute sinusitis, had been treated by various methods for periods of from 2 to 25 years with questionable results. The methods used were as follows: local nasal therapy, sinus drainage, bronchoscopy, allergic and drug therapy, and environmental change, often with results that made the types of therapy as uncomfortable as the disease itself. Still others after having gone through these procedures resorted to self medication using various proprietary asthma and bronchitis remedies and epinephrine nebulizers or injections of epinephrine. The results with penicillin mist inhalations every 3 to 4 waking hours produced marked improvement in most of these cases. Three patients had to discontinue treatment because of local reactions such as burning and swelling of the tissues of the oral cavity and one patient experienced nasal irritation. However, they improved while therapy was used. Two were able to resume treatment when the concentration of the penicillin was reduced to 10,000 units per cc. and the mouth washed prior to, during, and after nebulization. Moreover, symptoms remained under control with allergic management even after penicillin was stopped. When symptoms again recurred due to infection the penicillin inhalations were reinstituted with favorable results. (Table 1.)

These remarkable results which are in many instances better than reported by other investigators, can be explained by the fact that these patients also received treatment for their underlying allergies. Once the infectious element was controlled the response to allergic treatment was markedly better, whereas previously the treatment for the allergic condition was not considered satisfactory. This of course applies to allergic conditions due to or complicated by infection. Acute sinusitis was aided as above without allergic management. It must be restated that penicillin inhalation therapy has no value in non infectious asthma. Its prime importance is in controlling the bacterial cause or complication that so often exists in bronchial asthma. With control of infection many cases of asthma that previously did not respond to allergic therapy now become controlled. The same applies to allergic rhinitis and sinusitis.

Table 1

	No. of cases	Marked Relief	Moderate to good relief	Fair or no relief	Under allergic management
Bronchiectasis	6	4	1	1	3
Bronchial asthma with secondary bacterial infection	10	8	1	1	10
Asthmatic bronchitis due to bacterial allergy	8	6	0	2	8
Sinobronchitis	6	5	1	0	6
Chronic sinusitis (Allergic rhinitis plus infection)	10	7	3	0	10
Acute sinusitis	10	8	2	0	0
	50	38	8	4	37

76 percent marked relief
16 percent had moderate to good relief
8 percent fair or no relief

Case Histories

CASE I.—J. M., female, aged forty-two—Bronchial asthma of five years duration. Complete testing and allergic treatment consisting of injections of dust for past few years. No apparent relief. Cough was persistant with copious expectoration, dyspnea and wheeze occurred on the slightest exertion or on assuming horizontal position. Penicillin nebulizer and nebutabs were given with instructions to use 1 nebutab (50,000 units of penicillin) every three waking hours. Within twenty-four hours the cough was greatly diminished, sputum reduced to less than one-fourth the amount previously expectorated, wheezing was diminished and patient was able to sleep for five hours without interruption. Clinical improvement continued and the inhalation of penicillin mist was cut to twice daily. Injections of dust and vaccine seemed to be much more effective in controlling asthmatic symptoms after the secondary infection was controlled. No penicillin has been used for the past two months.

CASE II.—H. D., male, aged sixty-seven—Asthmatic bronchitis, bronchiectasis, cardiac decompensation. The patient has been an asthmatic for over twenty-five years and orthopneic for past two years because of severe cough and copious expectoration on lying down. He was unable to sleep more than one hour at a time without waking to cough and expectorate. Received injections of dust and vaccine which seemed to be ineffective the past year. He was on a maintenance dose of digitalis—2 U. S. P. units daily for the past four years. A nebulizer with nebutabs was given to be used every three waking hours. After the first day the patient was so elated he phoned he was able to sleep for five hours continuously for the first time in several years. The amount of expectoration was markedly reduced and the patient's morale reached a new high. After having been unable to work for the past three months he asked for permission to return to work.

CASE III.—J. R., male, aged fifty-five—Asthmatic bronchitis, bronchiectasis, sinusitis for the past four years. Worse in winter, but symptoms are perennial. Took adrenalin hypodermically at

least twice daily for the past two years. Coughed up heavy mucoid stringy material every morning and had bad attacks of coughing and expectoration several times daily. Wheezing was constantly present—dyspnea on slight exertion. Complete testing was negative to all allergens except for delayed bacterial reactions. The penicillin spray was started using about 5000 units of penicillin per inhalation. Improvement was noted but the early morning cough remained. Nebutabs were then instituted and improvement became marked—very little cough or expectoration in the morning or any time. The same solution used in the sinuses offered great relief. No adrenalin has been used for three months. X-rays taken before and after treatment show the improvement in his condition.

Case IV.—D. W., female, aged thirty-eight—Diagnosis: Fall pollinosis three years duration; late spring pollinosis twenty years duration, chronic sinusitis fifteen years, chronic bronchitis one year duration. She had been treated for late spring and fall pollinosis for past three years with fair relief. Has had continuous post nasal drip since mid-1946 with severe cough and wheezing. Postnasal drip has been present for the past fifteen years, the drip becoming so profuse she was unable to lie down. Injections of dust and vaccine in addition to pollen extracts were of no avail. Various types of nasal therapy gave no relief. Penicillin was prescribed for nasal and bronchial inhalation. The nasal symptoms of obstruction and discharge were greatly relieved. The spray was stopped and the thick yellow discharge reappeared. Nebutabs were used again every four waking hours and the condition improved tremendously. There has been no post nasal discharge for the past two months although the penicillin inhalations were stopped ten weeks ago. Allergic therapy has been continued.

Case V.—M. B., female, aged thirty-three—Frequent colds and attacks of asthmatic bronchitis every winter and spring for the past five years. The cough, wheeze and expectoration were not relieved by medication or injections although the patient did not come for treatment frequently because she seldom experienced relief. She returned this spring complaining of a cough and wheeze so severe that she was awakened three to four times a night by a cough, followed by heavy expectorations of mucous. She had taken several cough remedies without relief. Nebutabs were given—after the first day of treatment she was aroused only once and after the second day the cough and expectoration subsided completely. Her condition has remained good for the past ten weeks.

Case VI.—L. S., female, aged forty-four—Asthma and bronchiectasis for past fourteen years. Worse in winter. Profuse expectoration in morning and has frequently four or five hard coughing spells during the day. She was bronchoscoped several times with very short intervals of relief. Frequent colds for years. Testing was negative except for a moderate reaction to bacteria. Placed on nebulizer and nebutabs to be sprayed three times a day orally. Relief was marked—coughing in the morning was negligible and expectoration was scant, thin, and easily brought up. Nebutabs are used once daily at present with practically no symptoms remaining. X rays before and after show the improvement. (Fig. 5, 6.)

Case VII.—P. B., female, aged thirty-four—Frequent head colds, coughs, wheezing and expectoration since an attack of lobar pneumonia in February 1945. Always coughed on arising with expectoration of phlegm even when she considered herself feeling good. X-rays of chest prior to treatment revealed marked increase in prominence of hilar region and lower stem bronchi. Penicillin given by oral inhalation 50,000 units three times daily. Cough stopped completely within three days with no coughing or expectoration in the mornings. The treatment had to be stopped after six days because of soreness of the mouth and tongue which was due to penicillin sensitivity.

Case VIII.—M. M., female, aged sixty—Cough, orthopnea, insomnia, weight loss of over fifty pounds in past two years. Crepitant rales throughout chest. X-ray revealed fibrosis of lungs. Expectoration of thick yellow gray mucous. Often has a yellow mucoid post nasal discharge. Was treated with various cough remedies, sedatives, injections of vaccine aminophyllin, etc. with very little effect. Nebutabs were instituted by nebulizer every four hours. Within one week the amount of cough and expectoration was greatly reduced, the sputum becoming lighter in color and much less viscid. Not awakened at nights by the racking cough. Dyspnea on exertion remains as does wheezing but patient is in her own estimation sixty percent improved. No further improvement can be expected in view of the marked fibrotic changes in her lungs.

Case IX.—W. D., male, aged forty-nine—Asthmatic bronchitis for ten or more years. Improved somewhat under allergic management but developed severe bronchitis and pneumonia every year for past four years. After these episodes cough, dyspnea, wheeze and expectoration would remain for periods of a month or more. Two months ago an attack occurred which was characterized by cough, dyspnea, wheeze and expectoration of thick yellow mucous. A subfebrile temperature was recorded. Nebutabs were given with instructions to use every three hours. The condition was markedly improved in three days, cough was diminished seventy-five percent, sputum became scant and thin and dyspnea and wheeze were practically gone. The following week he continued the use of the penicillin inhalations and stated that he felt in excellent health. (Fig. 7, 8.)

Case X.—E. W., male, aged twenty-three—Frequent colds for past six years characterized by sneezing, nasal and postnasal discharge, burning

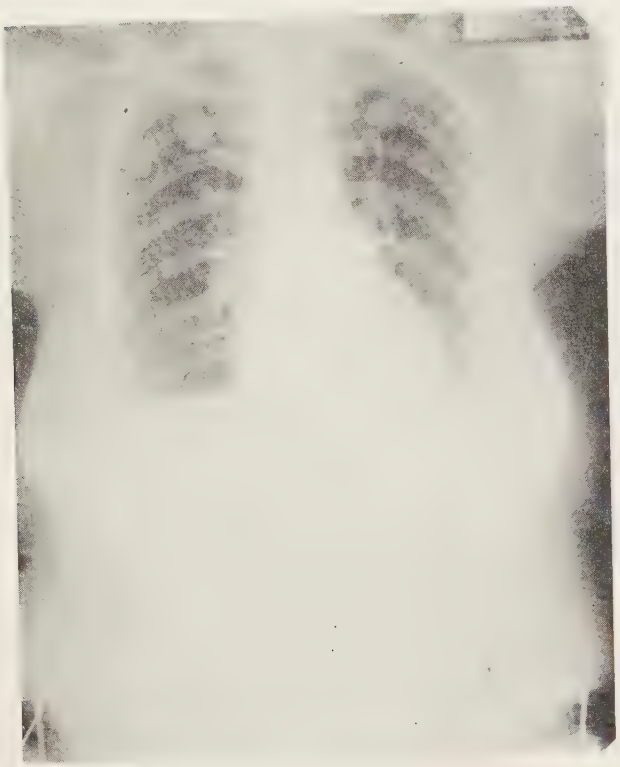

FIG. 5.—L. S. Film taken 3/26/47 shows mottled appearance of both lungs. Linear striations are very prominent along both inner zones, and the right middle zone.

FIG. 7.—W. D. Film taken 4/9/47, shows increases in the lung markings throughout both lung fields, particularly along both bases.

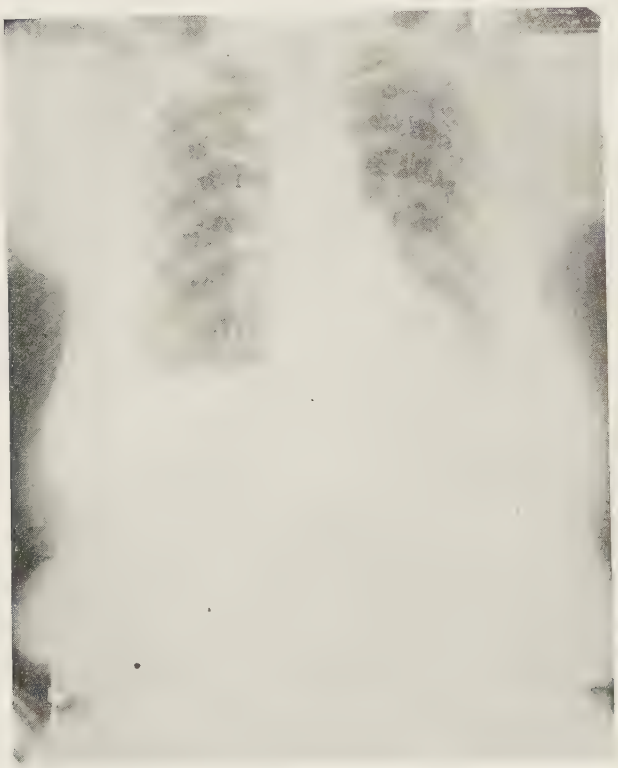

FIG. 6.—L. S. Film taken 4/30/47, after use of *Nebutabs* by inhalation as described there is clearing of the right lung and the left to a lesser degree.

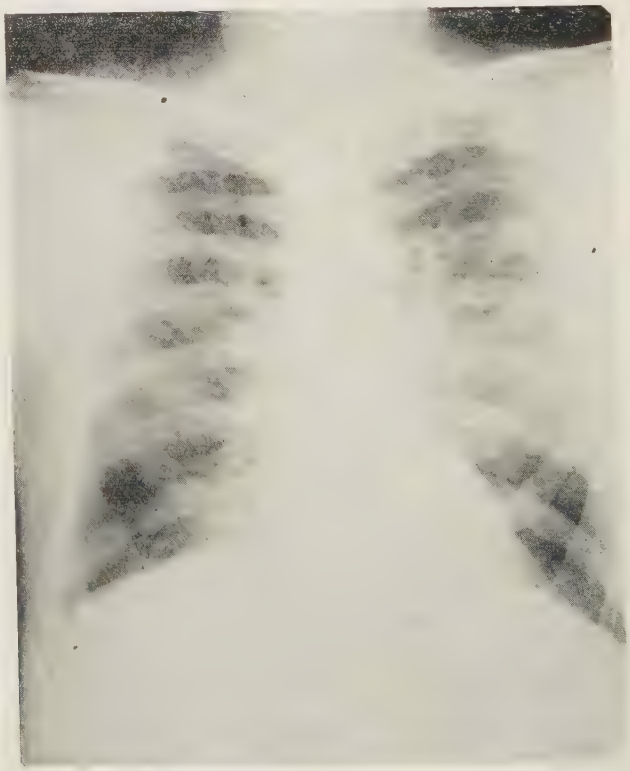

FIG. 8.—W. D. Film taken 5/1/47, after inhalation of *Nebutab* solutions three times daily for 10 days. Shows clearing at both bases and definite improvement in appearance of lung fields.

and soreness of eyes and throat. Tonsils had been removed some years ago. Vaccine and dust injections gave mild protection but were of no value during attacks. Once symptoms occurred they usually persisted for several weeks even with bed rest. With the last attack the patient was instructed to use nebutabs in an atomizer. After two days treatment he felt that he was cured. The nose was clear and the nasal and postnasal discharges were gone.

These cases demonstrate the effectiveness of penicillin inhalation using a hand compressed nebulizer. (A foot tire pump attached to the nebulizer was used by some patients with equal success.)

The following precautions should be taken into consideration when using penicillin by inhalation:

1. It is not a cure for allergy but a valuable adjunct in treating infected or bacterial allergic conditions.

2. Allergic reactions to penicillin may occur with this method as with any other medium of penicillin administration. Local effects due to inhalation may produce soreness, dryness, edema of the tongue, mouth or nose, but it is quite uncommon and can often be minimized or averted by washing the mouth with water in between inhalations and after the treatment.

3. Penicillin inhalations at least those given by hand compressed apparatus, are not to be depended upon in acute generalized infections where the possibility of bacteremia may exist, because the patient is too toxic and weak to manipulate the apparatus intelligently. Intramuscular injections are to be preferred in these conditions until the danger is over, then inhalations can be used for their local as well as general effect.

4. Mechanical obstructions in the nose, sinuses, trachea or bronchi will of course prevent penicillin inhalations from reaching the diseased areas beyond.

5. Penicillin resistant infections will not respond to this method or any other method of penicillin administration.

Summary

1. A new efficient method of penicillin inhalation has been devised whereby a 1 grain tablet containing 50,000 units of crystalline penicillin G is dissolved in 1 cc. of tap water and placed in a hand compressed nebulizer which is capable of delivering particles of penicillin (2 to 3 microns) with sufficient velocity to be of marked therapeutic value in the *ambulatory* treatment of acute and chronic sinusitis, sinobronchitis, acute and chronic infective asthma, chronic bronchitis asthma and bronchiectasis.

2. The method which is within reach of all, requires no expensive or non-portable unwieldy apparatus.

3. This innovation shortens the disease process considerably and in instances where infection is a predominant factor prevents many complications as well as chronicity.

4. Chronic cases are greatly benefitted and once more become manageable by other methods of treatment: allergic, physiologic, etc.

5. It has been shown by x-ray studies and determination of the particle size that the penicillin so used in a hand compressed nebulizer can reach the lower stem bronchi and lateral areas of the lung.

6. X-ray studies after the use of this method have shown the marked improvement obtained scientifically as well as clinically.

7. The method restores self confidence and morale in many chronics who because of their disagreeable coughs, expectoration or discharging noses have retired from society. Many have been able to resume work and attain economic independence. Acute cases have been greatly benefitted, cutting down loss of time, chance of chronicity and invalidism.

8. Does not require hospitalization, expensive apparatus or frequent visits to the doctor for this heretofore specialized treatment. Little loss of time from work or pleasure is involved. No refrigeration is necessary.

9. A real test of therapeutic efficiency. Patient continues his regular work in his regular environment. Relief cannot be attributed, as in so many other asthmatic or allergic states to rest or environmental change.

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DRUG ERUPTIONS OR DERMATITIS MEDICAMENTOSA*

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Definition

In contradistinction to the cutaneous reactions provoked by external contacts, the term drug eruptions or dermatitis medicamentosa is generally applied to the reactions and pathologic manifestations in the skin and mucosae resulting from oral or parenteral administration of drugs. Certain drugs and medications gain entrance into the blood stream by way of inhalation, instillation into cavities and by contact with the normal skin; but absorption is of course greatly enhanced when remedies are applied to denuded, eroded or ulcerated areas of the skin and mucous membranes. The line dividing a drug eruption resulting from internal medication and a dermatitis from external contacts cannot always be sharply drawn, for the reason that they may occur simultaneously. For example, a patient develops a contact dermatitis on the pubic region from blue ointment and subsequently suffers from a generalized mercurial rash and stomatitis resulting from absorption and hematogenous dissemination of the poison; or a lotion used on the scalp often provokes a contact dermatitis locally, with a subsequent generalized blood-borne dermatitis. However, many drug eruptions occur quite independently of external contacts and probably bear no etiologic relationship to allergic and immunologic mechanisms; the blueish-gray discoloration of the skin, argyria, due to the cumulative effect of silver and its compounds and the hyperpigmentation from arsenic are pertinent illustrations.

Allergy and Immunology

Although much has been learned about allergy and immunology in drug hypersensitivity, little is known of the mechanism which provokes reactions of allergic character. The abnormal and untoward responses to sensitizing drugs are for the most part capricious and often quite unpredictable.

It is a generally accepted postulate that in susceptible persons certain drugs act as allergens and are capable of inducing primary specific sensitizations and subsequent allergic reactions in any tissues or organs which have undergone sensitization. An increasingly large number of such allergic manifestations are being encountered today, more especially from the use of the newer remedies such as the sulfonamides and penicillins, which are potential sensitizing agents; these reactions occur either as a result of absorption following topical applications to the skin and mucosae, or by inhalation, or by oral and parenteral administration. In other words, a primary specific sensitization may be induced, for example, by the oral administration of sulfadiazine, or by its instillation into the nasal cavity; the subsequent *topical* application of one of the sulfonamide group to the skin often elicits both localized and generalized allergic eruptions, many of which are exceedingly resistant to treatment. The frequency of these untoward reactions has directed signal attention to the necessity of avoiding the indiscriminate and injudicious use of topical applications in skin diseases for which other adequate remedies are readily available and which accomplish the same results. With this precaution in mind, many patients may be protected against serious complications on occasions when one must resort to the use of this group of drugs to combat serious systemic diseases.

In a previous communication dealing with eczematous eruptions due to drugs, Sulzberger and the author pointed out that "drug eruptions often manifest the three classic periods known to be characteristic of other forms of immunologic sensitizations. Thus, many persons present the *period of refractoriness* to sensitization, during which the drug exposures are tolerated for days, months or years and then, for no apparent reason, the same exposures may produce a specific sensitization. The *incubation period of sensitization* can often be discerned in drug eruptions, the eruption or other signs of hypersensitivity becoming manifest five--fourteen--twenty-one days after the sensitizing drug exposure. The *reaction time or latency period* is also a regular occurrence in drug eruptions, the hypersensitive tissues showing a lag of seconds or minutes (urticarial reactions, fixed eruptions) to hours or days (eczematous eruptions, nodose erythemas, acneform, morbilliform, and scarlatiniform eruptions, etc.), between each exposure to the drug and the first sign of clinical reaction". (Sulzberger, M. B., and Wise, Fred: Drug Eruptions II. Dermatitis Eczematosa due to Drugs. *Arch. Dermat. and Syph.*, 28: 461: October, 1933).

Incidence

Important as drug eruptions are, in their relation to every phase of medical practice, their incidence, when compared with the incidence of skin diseases in general, is low; moreover, most of them are mild and of short duration. While many disappear more or less promptly when the offending drug is stopped, a small proportion are of long duration and may coexist with serious impairment of health and curtailment of productive activities; in a still smaller proportion of patients, the prognosis may be quite grave and the disease may be fatal.

When one reflects on the enormous quantities of hypnotic, sedative, analgesic, cathartic and other medicaments including vitamins, hormones, antibiotics, etc., consumed by the public day in and day out, without causing untoward manifestations except in isolated instances, it becomes evident that hypersensitivity is of relatively rare occurrence. In this connection, it is of interest to note that some text-books state that eruptions from aspirin are

"common". This led the author to ask several dermatologists of many years' experience how many aspirin eruptions they had encountered; one said "between 35 and 50", the other said "only one". One of the older general practitioners in New York could recall only one instance, which happened to be fatal and was recorded in the literature; in my experience of 40 years, I have seen only 4 patients with aspirin eruptions. Such a disparity is hard to explain.

On the other hand, a large number and variety of drugs are significantly prone to induce eruptions showing great variations with respect to clinical symptoms, course, complications, response to therapy, prognosis and so forth. This group comprises for the most part the iodides and bromides, the antitreponemal arsenicals and bismuth, the various preparations of gold, the sulfonamides and penicillins and atabrine (quinacrine hydrochloride). Some drugs, of which nirvanol, used in the treatment of chorea, is said to be an outstanding example, provoke eruptions in all recipients. Under circumstances in which one or another of this group of drugs is used by *mass-administration,* such as obtains in large hospital wards and clinics devoted to the treatment of venereal diseases, the incidence of drug eruptions is naturally disproportionately high, when compared with their incidence in polyclinics and in private practice. This is true, also, with respect to gold compounds used in arthritis and in lupus erythematosus; perhaps the most significant occurrence, in this connection, is the incidence of eruptions resulting from the mass-administration of atabrine to the armed forces in the Pacific and parts of the Mediterranean areas, for the prevention and treatment of malaria. But even with respect to atabrine reactions in general, Agress found an incidence of less than one-twentieth of one percent.

Clinical Manifestations

It is a well-known fact that most drug eruptions mimic and resemble the more easily recognized conventional skin diseases. They range from a mild transient erythema to severe destruction of tissue and to gangrene; the cutaneous reactions are vascular, follicular, ulcerating, vegetating, eczematous, and pigmentary.

In the hypersensitive individual, drugs can provoke reactions in the skin and mucosa which are analogous to reactions resulting from disease: namely, hyperemias and inflammations, hemorrhages, hypertrophies, atrophies and pigmentary alterations. The cutaneous lesions are characterized by great multiformity; they are morbilliform, scarlatiniform, urticarial, macular, papular, nodular, vesicular, bullous, etc.; they exhibit scaling, crusting, erosions, ulcers, fungoid lesions, a great variety of pigmentary alterations and so forth. Moreover, certain drugs, for example the arsenicals used in treponemal infections, may cause also the loss of hair and nails; oral administration of thallium acetate regularly produces alopecia of the scalp in children treated for tinea capitis; atabrine eruptions are sometimes associated with patchy alopecia of the scalp, bearded region of the face and the trunk and extremities. While the clinical manifestations of some eruptions are often characteristic in relation to the offending drugs, only a small group of eruptions can be regarded as "typical". Among these are the eruptions provoked by arsenic, silver, bromides and iodides and phenolphthalein.

A grayish discoloration of the gums sometimes follows prolonged bismuth injections; so-called "fixed eruptions", of which the manifestations are rather well-defined and uniform, are examples of hypersensitivity to arsenical compounds, phenolphthalein, antipyrine, phenacetin, aminopyrine, sodium amytal, atabrine and other derivatives of acriflavine; fixed eruptions from gold and the sulfonamides are not often seen, but may occur more often in skin exposed to sunlight. A peculiar yellowish-green pigmentation is observed in some atabrine eruptions. Icterus has been reported from administration of thiouracil. Gangrene of the skin due to poisoning with ergot is extremely rare in this country (Drs. Yates and Cahill reported a case resulting from hypodermic injections of ergotamine tartrate).

Most drug eruptions are bilateral and symmetrical; their distribution and extent vary from a few isolated lesions on different parts of the body, or even a single lesion, to generalized eruptions which may progress to complete involvement of the skin, and the buccal and genital mucosa. Isolated and limited eruptions are prone to result from the ingestion of amidopyrine, antipyrine, sodium amytal, veronal and phenolphthalein; bromides often cause single lesions on the legs; the long-continued use of arsenic results in the formation of one or several epitheliomas on the trunk or the extremities. Most sensitizing drugs in common use provoke generalized eruptions; universal involvement of the skin, with the loss of hair and nails is an all too frequent sequel to antisyphilitic administration of the arsenicals. Lesions confined to the buccal mucosae are often due to the barbituates and carbamides.

The large proportion of eruptions resemble the so-called toxic erythemas or erythema multiforme-like rashes; these are usually of short duration and regress more or less rapidly when the offending drug is stopped; but persistent eruptions of long duration result from arsenicals, silver, iodides and bromides, phenolphthalein, atabrine, and barbiturates. Transient constitutional symptoms and complaints of burning and itching accompany the milder eruptions, but the generalized and progressively advancing eruptions are usually associated with pronounced and often grave metabolic and visceral complications and blood dyscrasias. With some eruptions, bromoderma of the legs for example, patients complain of varying degrees of *pain* in the affected areas.

Diagnosis

The sudden appearance of an eruption whether or not accompanied by fever and other constitutional manifestations should direct suspicion toward a

drug rash. At the same time, the prompt exclusion of other eruptions, such as a syphilitic roseola or the rash of German measles for example, must of course be kept in mind. Beside the careful examination of the skin and mucous membranes in a good light, the two most important items in establishing the immediate diagnosis are, first, to maintain a *high index of suspicion* with respect to drugs; and second, to obtain an informative history from the patient. Do not ask the patient *if* he is taking any medicines or receiving injections; ask him *when* he received the last injection. Even educated and intelligent patients seem to be under the impression that it is only their doctor's prescriptions about which you are inquiring, and that medicines casually bought over the counter have no significance. To obtain a logical and clear history in a reasonably short period of time is really quite an achievement, especially with dispensary and clinic patients. On several occasions the author has noted that young people suffering from epilepsy actually deny taking bromides or luminal, despite visual proof to the contrary. A middle-aged, neurotic woman consulted the author about a fungating bromoderma of the leg, mistakenly diagnosed as mycosis fungoides, a fatal disease which she promptly looked up in a medical book and was on the verge of committing suicide. In pre-blood test days, not a few unfortunate victims of mistaken diagnoses were subjected to antisyphilitic treatment, when the trouble was nothing worse than a transient drug eruption. In many cases, the disappearance of subjective and objective symptoms on withdrawal of the offending medication, suffices to establish the correct diagnosis; but many eruptions do not regress on withdrawal of the drug even after the lapse of weeks and months; among the latter are those provoked by bromides and iodides, the arsenicals, bismuth, silver, phenolphthalein, the barbiturates, and atabrine.

Skin tests and laboratory investigations are, with a few exceptions, of minor value in confirming and establishing a diagnosis. Dr. Montgomery of the Mayo Clinic states that practically only bromodermas and iododermas exhibit characteristic histologic changes in the tissues; nevertheless, microscopic examination of tissue is of value as an aid in differential diagnosis and in the elimination of diseases other than those due to drugs. In cases of lichen planus-like eruptions resulting from the arsenicals and atabrine, even microscopic findings can not be regarded as dependable diagnostic criteria. The presence (in the skin) of heavy metals can be demonstrated by spectroscopic and microchemical examination, but such demonstrations can not be accepted as evidence of cause and effect. Since some sensitizing drugs in minutest amounts are capable of eliciting an eruption, examination of body fluids, secretions and excretions are of little practical value. On the other hand, blood cell examinations are very important, since blood dyscrasias frequently complicate a variety of drug eruptions.

Skin tests have been of little value in the attempts to discover the offending drugs. However, in some of the eczematous and urticarial eruptions, patch tests and intradermal tests may prove informative to a rather limited degree and the reactions of sensitivity thus elicited require expert interpretation. Thorough investigative work in this field, carried on by many clinicians, is now under way, and many of their publications are available. In many instances, diagnosis is simplified when it is learned that an eruption flares up after repetition of the suspected medication or injection. Immediate exacerbation has been noted especially in phenolphthalein eruptions; I have seen instances in which patients kept on taking this drug in the hope that a "good cleaning" would drive the rash and the "acid" out of their systems. In eruptions caused by atabrine, a unique diagnostic aid is the fluorescence of the nails, hair and skin under exposure to the Wood filtered ultraviolet rays.

Treatment

Immediate withdrawal of the offending drug, and, whenever possible, stopping the use of *all* medication, combined with the application of soothing topical remedies, result in a prompt response in the majority of eruptions, more especially in the erythematous, morbilliform and scarlatiniform reactions. Eruptions produced by bromides and iodides respond fairly well to intravenous injections of decinormal sodium chloride solution in dosage of 100 to 500 c.c. at intervals of 2 or 3 days. In the more serious sulfonamide, penicillin and atabrine eruptions, symptomatic and general supportive therapy is necessary; this includes injections of crude liver extract and administration of ascorbic and nicotinic acids, together with vitamin A, each of them in full dosages; in the chronic and debilitating cases, blood transfusions are indicated, and patients should be hospitalized. Similar methods of therapy are used in combating the severe eruptions caused by gold, arsenic and the various anti-treponemal arsenicals; arsphenamine eruptions complicated by secondary pyoderma and abscess formation, should be treated with injections of penicillin.

A new remedy known as BAL (British anti-Lewisite) "was found to be effective in the systemic treatment of severe arsenic poisoning occurring either after exposure to the arsenical blister gases or as a complication of arsenotherapy. Of particular interest is the possible use of BAL following the administration of arsenicals in the treatment of syphilis. When this statement was prepared, reports of more than two hundred cases of various types of arsenicals poisoning treated with BAL had been received. The results indicate that the danger of complications following the use of arsenicals may be greatly reduced by the early administration of BAL in adequate dosage. BAL has also been used in a small series of cases of acute mercury poisoning with promising results . . . As yet there are no data available on the usefulness of BAL in poisoning due to other metals". Excellent response to this drug has been reported in the treatment of hemorrhagic encephalitis caused by intensive arsenotherapy, and "in 88 cases of arsenical

dermatitis, of which 51 were of the exfoliative type, the administration of BAL usually stopped the progression of the inflammatory reaction and accelerated the healing process. Twenty percent of the patients did not respond to treatment. In 10 of 11 cases of arsenical agranulocytosis the administration of BAL was followed by an increase in the total white blood cell count and a proportionately greater increase in the number of polymorphonuclear leucocytes. Twenty-five of 26 patients with acute mercurial poisoning survived following treatment with BAL". The Council on Pharmacy and Chemistry of the A.M.A. suggests that the name Dimercaprol be used as a non-proprietary synonym for this drug. (Report of the Council, Jour. A.M.A., 131, 10, July 6", 1936).

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A METHOD OF RESTRAINING ABDOMINAL LEAKAGE IN THE TREATMENT OF INTESTINAL AND BILIARY FISTULAE

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Text-books and journals are filled with various descriptions and methods used in the treatments of intestinal and biliary fistulae. Unfortunately, the majority of these methods are unsatisfactory and disappointing.

Every surgeon doing abdominal surgery has at some time been put to wits end trying to heal-up and simultaneously prevent the enormous amount of daily losses of body fluids through these artificial openings.

Some years ago, while filtering a solution through a glass funnel, the author was displeased by the rapidity with which it passed through the cotton filter. Unintentionally, he removed the cotton, squeezed it dry and replaced it in the funnel. This time, instead of passing through rapidly, the solution barely seeped through the cotton.

At the time, the author was greatly perturbed over the condition of a patient who had a large duodenal stump fistula, following a gastric resection the author had performed. Heroic efforts had been made to heal-up as well as to preserve the large amounts of intestinal secretions which were being lost through the fistula tract. Despite the large amount of fluids given by every known means, dehydration could not be controlled.

The skin and wound around the tract was terribly inflamed, painful and partly digested. Aluminum powder, while satisfactory, did not control the irritation.

The author tried everything which was recommended, read all available literature, consulted other men, but the patient made little headway. Finally, the cotton in the (filter) glass funnel was recalled. The author wondered why it wouldn't work in a fistula?

At first a piece of non-absorbent cotton was tried. This was packed in the fistula tract, but proved unsatisfactory as the secretions began leaking around the margins of the cotton. Next, a piece of absorbent cotton was soaked in sterile water, and while dripping, was packed into the fistula. Then with a urethral bulb syringe, all water was aspirated from the cotton plug. This left the cotton dry. To the author's surprise, it acted as a cork for nearly two hours, before it became saturated and leakage started again. Immediately leakage recommenced, the saturated cotton plug was removed and replaced with another plug. The same thing occurred. During this time the wound remained fairly dry even though the patient drank two ounces of fluids every half hour.

In less than two weeks, the fistula and the abdominal wound were healed. In short, the author discovered that over two-thirds of the constant leakage was now passing across the fistula tract in to distal portion of the gut below. The cellular and serum imbalances were no longer completely out of balance and rehydration was partially under control.

The author has since applied the above described treatment in a number of intestinal fistulae, including gastric and biliary openings. Results have been uniform and satisfactory. Moreover, this method has been demonstrated to other physicians who have obtained the same results. It is most important, however, that the above technique be carried out as described, or the results will prove unsatisfactory. The changing of the cotton plug every two hours is well compensated by both the results and the satisfaction one desires.

Some men pass a Harris or Miller-Abbott tube into the stomach thus allowing the tube to by-pass the fistula opening in the gut and work its way distally.

It is true, large quantities of water and fluids can be injected directly into the intestines, but such a method does not prevent the large amount of leakage, which in turn entails severe losses of electrolytes producing chemical, biological and other cellular imbalances.

Conclusion

A method is described whereby, abdominal fistulae spillings can be quickly brought under control.

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Fecal Examination Methods In Schistosomiasis Japonica

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Introduction

Since Katsurada in 1904 observed the ova of Schistosoma japonicum in the feces, there has been much speculation regarding the method or methods of choice in diagnosing cases of Schistosomiasis Japonica. In 1924 Faust and Meleney pointed out the importance of the examination of strips of mucus if they existed in the stool. They also employed the gravitational sedimentation method when ova were difficult to find in direct smears (1). In 1928, De Rivas, working with the ova of Schistosoma mansoni, employed the acid-ether technic (2). This was followed in 1945 by modifications of Weller and Dammin using acid-ether in the diagnosis of Schistosomiasis Manson (3). From 1924 to 1945, a period of 21 years, (aside from the work of Faust and Meleney in 1924) the literature contains very little information on further developments in the diagnosis of Schistosomiasis Japonica. In 1945 McCorkle described a modification of the Faust-Meleney method. (4). In 1946 Baroody and Most described a modification of the centrifugal water sedimentation method (5). In 1946 Faust pointed out the importance of familiarity with the developmental stages of the ova in order that technicians may not confuse them with fecal vegetable debris (6). Also in 1946 Nelson and Bayliss described a method which they designated as "Continuous-flow funnel sedimentation" (7).

Baroody and Most in 1946 demonstrated in over 900 patients with Schistosomiasis Japonica the inadequacy of the brine flotation and zinc sulfate methods, therefore these two methods will not be discussed in this paper.

METHODS

The Direct Fecal Smear

The direct fecal smear because of its simplicity of preparation, was and still is the most convenient method. As commonly practiced this method is performed as follows: A very small particle of feces (actual weight about 6 mg.) is emulsified in a drop of physiological saline or tap water; place cover slip and examine. This method works very well provided the stool is loaded with ova, but the cases which we are apt to encounter now in the United States are either relapsed ones or undiagnosed chronic types. In both the former and latter types we may encounter very few ova and the commonly used direct smear method may prove of little value. We suspiciously note that 6 mg. of feces is a very minute particle and miraculous results are not to be expected. We have on some occasions used a modification of the technic, namely, placing about 12 mg. of feces on a dry glass slide and pressing on the cover slip, being careful not to break the glass. It is true that the result is a rather thick preparation, but if intense illumination is provided, the ova of Schistosoma japonicum can be seen as white or nearly hyaline in appearance and be easily differentiated from the surrounding dark environment. In a comparative run on stools of patients undergoing fouadin and tartar emitic therapy and where it was known that 49 of them were known positives, only 10 were positive by the approximately 12 mg. modification of the direct smear method. By deduction it can be surmised theoretically that only about 5 or 6 positives would have been the result from the commonly used direct smear. It can be concluded that in stools containing few ova even the modification is not adequate as a method.

Direct Mucus Smear

It is not uncommon to see at times in cases of Schistosomiasis Japonica mucus adhering to the stool, particularly to the surface. The coloration may vary from yellow-pink to a deep red. Generally speaking, the concentration of ova will be proportional to the intensity of the color of the mucus. We have seen as many as 60 ova in one low-power field of the microscope. The technic is quite simple and is as follows: grossly examine the stool specimen under a table lamp and select the most suspicious mucus area, a deep red one if possible. Remove this with an applicator stick to a glass slide and gently press thin with a cover slip. Ova in great numbers can be seen under the low-power objective of the microscope. The use of a good table lamp is of prime importance for the gross examination of the stool because we have experienced some very bad results when ceiling illumination alone was used. The mucus areas may be so minute that close inspection is imperative for good results. When mucus occurs in the stool this is the best of all methods. It is fast, it is simple and by no other method will such a high concentration of ova occur and still retain their viable morphology. Apparently, all stools do not possess this mucus attribute and at times it becomes increasingly difficult to demonstrate even one ovum on a patient. Then we are forced to try concentration technics in an attempt to arrive at a specific diagnosis.

Acid-Ether Technic

The acid-ether technic of De Rivas has been quite popular since its advent in 1928. It was intended originally for detection of ova and cysts in general. It concentrates cysts very well but morphological distortion makes accurate diagnosis difficult. The method played an interesting role in the detection of the ova of Schistosoma mansoni and has been recommended by several workers in recent years. The method was used to some extent on the Island of Leyte in cases of Schistosomiasis Japonica but due to inadequate facilities and equipment results

are rather incomplete. Field units were forced to use direct smears and some form of the gravitational sedimentation method. In the United States we had the opportunity to try the method on patients sent to us from the endemic Pacific area. Of 50 patients found positive by a modification of the water centrifugal sedimentation method, only 16 were positive by acid-ether. The method is superior to that of the direct fecal smear, but, nevertheless, is not the method of choice in Schistosomiasis Japonica. The De Rivas technic is as follows: thoroughly break up about 1 gram of feces in about 6 c.c. of 5 percent acid, strain through gauze into a 15 c.c. centrifuge tube; add equal volume of ether and shake thoroughly. Centrifuge 2 to 5 minutes at 2500 r.p.m. Break plug of debris and pour off supernatant fluid. Examine the sediment.

The Weller and Dammin modification of this method substitutes 40 percent hydrochloric acid for the 5 percent acetic acid. We had somewhat better results with the latter method but this was not considered adequate for our continued use in practical work.

Of late there have been more modifications of the acid-ether technic. There has been the adding of detergents and solutions of sodium sulfate. These have improved somewhat the results of the orginal technic but have offered no sensational improvements because the original 1 gram sample of feces is still used. There is a total number of ova to be found in 1 gram of feces and no added chemical can increase this total. To get more ova, you just have to use more feces. If a certain 1 gram of feces contained only 1 ovum (this has been the case on many occasions), then no added chemical can possibly increase the yield to 2 or more ova. If the original 1 gram of feces is not increased we have really gained very little in our efforts of perfecting the method. Faust recently has demonstrated that inmature Schistosomiasis japonicum ova are destroyed by any acid ether technic, thus explaining the many negatives seen. (8).

Gravitational Sedimentation Method

This method is simply sedimentation by gravity. A large sample of stool is emulsified in 10 to 20 volumes of water, strained through cheese-cloth into a large conical jar. About an hour is allowed to permit sedimentation and the supernatant fluid is decanted or siphoned. Further washing and sedimentation is carried on until the supernatant fluid is clear. The latter is discarded and the sediment is examined for ova. A further step can be added by the addition of more water and placing in a warm place to be examined later for miracidia.

This gravitational sedimentation method was described by Faust and Meleney in 1924 (1). It is one of the oldest of the concentration technics and remains as one of the best. It can be utilized in field work because no centrifuge is required and water is the only reagent. Another advantage is the fact that viable ova can be detected. Its disadvantages can be classified, first, as time-consuming, requiring 2 to 3 hours for an examination (less time would spoil its efficiency). This particular time factor is not practical in mass work. Second, loss of eggs does occur in the process of decanting or siphoning the supernatant fluid. Eggs have been found time and time again in the discarded fluid even after allowing as much as 3 hours for the initial sedimentation. The mechanism of how this occurs is obvious: When warm water is used to emulsify the stool a scum appears on the surface within a minute and eggs can be trapped in the scum in a similar way that Weller and Dammin found existed in the "plug" in the regular acid-ether technic minus the detergent. Working with stools that had a fair infestation with ova it was found that as much as 30 percent of the ova can become trapped in the scum surface to be eventually discarded. Sedimentation by gravity is not sufficient force to separate the ova from the scum and transmit them to the bottom of the conical jar. Most of the ova found in the discarded fluid came from the initial washing; further washings gave smaller yields as expected; We can now definitely ascertain that fatty stools will produce smaller yields of ova in the sediment than ones containing smaller amounts of fat. In stools that may contain few ova and considering the possible egg-loss, it may become quite difficult to find the remaining ones. This obstacle probably inspired Fulleborn and others to proceed a step further and attempt the search for miracidia just in case the few ova that may be present were obscured by fecal debris. Water is added to the sediment and the contents are placed in a flask and more water is added to within an inch of the flask surface. This is placed in a warm place overnight and on the morrow search is made for swimming miracidia on the surface by means of a hand lens. The technician must be particularly careful not to confuse miracidia with large free-living protozoans which may be present. He may, therefore, be forced to rely on the microscope for identification.

McCorkle in 1945 devised another modification of the Faust-Meleney sedimentation method which involved the use of complicated glass apparatus, much of which had to be specially made (4). It is strictly an egg-hatching technic, the ultimate goal being to be able to detect the miracidia in as clean a water as possible by increasing the distance between the sediment and the water surface. Gram for gram of stool does not seem to render any increase or advantage over the Faust-Meleney technic. In fact, if the egg-hatching or miracidia test is used exclusively in any method, there remains one factor of importance, namely, the case of the non-viable egg. During courses of therapy especially, it is possible for the stool to contain only non-viable eggs and a method that involves egg-hatching exclusively would be worthless. Miracidia must evolve from viable eggs.

Another modification of the sedimentation method is one developed by Nelson and Bayliss and designated as the "Continuous-flow funnel sedimentation method" (7). The procedure is as follows: 10 to 15 grams of feces emulsified with water, strained through a screen mesh and poured into

a glass funnel the bottom of which is closed with a rubber-enclosed tube which also serves as an overflow tube. Water is passed into the funnel in such a way as to create a whirlpool and this washes the sediment with excessive sediment passing through the overflow. This washing is carried on for ten minutes with the assumption that the ova will flow to the bottom of the funnel and undesirable fecal particles will go to the top and be discarded through the overflow tube. Theoretically, the method is sound, but in common practice some of the ova are discarded through the overflow because all of the eggs do not sediment readily as in gravitational sedimentation. The method has its advantages, namely, a large fecal sample is utilized; it is practical for field use; it has a time advantage over the old gravitational sedimentation method; and it also has a sequel—hatching of the ova.

Modified Water Centrifugal Sedimentation Method (5)

1. Place 10 to 15 grams of feces in a 125 c.c. Erlenmyer flask containing about 100 c.c. of lukewarm tap water. Insert a #4 rubber stopper and shake vigorously for one to two minutes, or until the particles are in fine suspension.
2. Strain the emulsified feces through two layers of wet gauze into a 50 c.c. centrifuge tube with teated bottom (tube dimensions: height 4¾ inches; diameter 1 inch).
3. Centrifuge at 1500 r.p.m. for 30 seconds (brake of centrifuge applied gradually).
4. The supernatant fluid is decanted and tap water of about 40 C. is added to the 50 c.c. mark. Insert a rubber stopper and shake several times until the sediment is finely dispersed. The warm water causes a scum to rise to the surface. In this case it is desirable.
5. Repeat procedures 3 and 4 until the supernatant fluid is clear; 3 washings and 3 centrifugations are usually sufficient.
6. After the last washing and centrifugation the clear supernatant fluid is poured off and the packed sediment remains. If the finger is tapped gently against the side of the tube, the packed sediment is dispersed and settles to the bottom of the tube by gravity within a minute.
7. With a rubber-bulbed pipette place 4 drops of mixed sediment on a glass slide and cover with a large cover slip, size 22 by 40 mm. Make at least two slides.
8. Examine under low-power of microscope for ova.
9. If miracidia examination is desired, add about 10 drops of water to the remaining sediment in the tube, leave overnight in a warm place and examine on following day by placing entire contents of tube on a large glass slide without cover slip and with a dissecting microscope.

Summary of the Method

a. Large sample of feces is used; this is especially valuable in light infections.
b. Viability of the ova is determined.
c. Rapidity of method; report can be rendered within 15 minutes.
d. A hatching test is a part of the method.
e Other ova, cysts of protozoa and larvae of helminths may also be found and identified.
f. Preserved concentrated specimens can be made quickly by adding 10 percent formalin to the sediment in the tube at the end of the fresh examination.
g. No chemical reagents are required; minimum standard laboratory equipment is used.

This water centrifugation method varies somewhat from the original technic which had been used for many years in the detection of ova and cysts in several respects. First, the centrifuge tube is large and has a teated bottom instead of the conventional round bottom. The round bottom tube does not concentrate as well because at a centrifugal speed of only 1500 r.p.m. for 30 seconds the sediment is not tightly packed and there is a tendency for loss of sediment along with the supernatant fluid. Second, warm water is used throughout for the washing. It is desirable in this case because a scum forms on the surface thereby eliminating objectionable fecal debris, yet we know that some ova are trapped in this scum, the centrifuge releases the ova and sends them to the bottom of the tube while the scum remains on the surface to be discarded. This is a great variation from what occurs in gravitational sedimentation. Third, the speed of the centrifuge and the time involved are lowered. The reason that water centrifugation was not recommended in the past for Schistosoma ova was the fact that practically no eggs were found even in a known positive. Experimental evidence has demonstrated that this was caused by high speed centrifugation for 2 to 3 minutes. What actually happened was that the mature ova liberated their miracidia during the high centrifugation, and these in turn were battered to their death and the only evidence of their presence were some shell fragments of the eggs which were not always recognized by the technician. Even the immature ova did not fare so well under this high centrifugal ordeal. In the acid-ether technic high centrifugal speed is used yet the ova maintain their contour because they are fixed by the 5 percent acetic or 40 percent hydrochloric acids before centrifugation. In water the ova are viable and the 1500 r.p.m. for 30 seconds of the water centrifugal sedimentation method does not destroy the miracidia if liberated. The morphology of the ovum remains in an excellent condition for microscopic examination. Other ova and cysts, as well as helminth larvae can all be observed in a viable state, though the cysts are not as well concentrated as in higher centrifugal speeds.

Over 30,000 examinations were performed on approximately 900 patients. A peak of 300 examinations per day was finally reached. A fast and efficient method had to be used. Viability of the ova had to be stated for therapeutic reasons. The water centrifugal sedimentation method met these requirements and proved highly satisfactory in our work on Schistosomiasis Japonica.

Conclusions

1. In stools presenting bloody mucus, the direct mucus smear is the fastest and most efficient technic.
2. In non-mucus stools the direct fecal smear is not valuable if ova are few.
3. Acid-ether method is efficient if more than 1 ovum is present per gram of feces.
4. Gravitational sedimentation remains a good technic because a large sample of feces is used. It is time-consuming and not practical in mass work.
5. The water centrifugation sedimentation technic is a superior concentration method because: large fecal sample used; demonstrates viability; detects other ova, cysts and helminth larvae; examination requires only 15 minutes; reagent is warm water; miracidia test a part of the method.

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ATHLETE'S FOOT

A New And Effective Treatment

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Epidermophytosis—athlete's foot—is also known as trichophytosis and dermatophytosis. The treatment of this condition has never been satisfactory. Some cases clear up with the simplest remedies and others are resistant to the most powerful fungicides. The very numerous remedies recommended by dermatologists as well as general practitioners and the immense popularity of a large number of proprietary medications speak for the fact that no known treatment is definitely effective or to be relied upon. The usual texts recommend Whitfield's Ointment, potassium permanganate soaks, picric acid, copper sulphate, sodium thiosulphate solution, boric acid solution and a host of ointments made up of salicylic acid, oil of cinnamon, thymol, coal tar, zinc oxide, sulphur, mercurous chloride, benzoic acid, mercuric oxide (yellow) in a suitable combination and in a suitable base. The list of proprietary preparations is too long to even mention by name.

The length of the list is a confession of therapeutic weakness. Yet a study of the natural history of the epidermophyton provides enough facts to base a reasonable and scientific method of treatment that theoretically should be effective.

The epidermophyton is a fungus of pathogenic importance. The cultivation of yeasts and molds is one of the oldest and most important branches of microbiology. Pasteur's original studies were made with yeast. Pathogenic fungi are receiving more attention as causative agents in various types of skin and other infections.

Sabouraud's medium is a dextrose agar and was originally described by Sabouraud in 1892 (1).

The fungi concerned in ringworm of the feet, the epidermophytons are true pathogenic parasites, growing well on Sabouraud's medium. For the primary isolation of fungi from scales and crusts, T. L. Ch'in (2.) suggests the addition of 0.15 percent potassium tellurite or 0.05 percent copper sulphate to this medium to suppress the growth of bacteria. After preparation the final reaction of the medium is pH 5.6±. Sabouraud's maltose agar is a modification of the formula suggested by Sabauraud. (3.) Maltose is well adapted to the nutrition of these fungi. It is especially valuable in the culture of Trichophyton gypseum. (4). The final reaction of the medium is also pH 5.6±. Malt Extract Broth is another favorable medium in which the reaction is pH 4.7±. Wort agar with a reaction of pH 4.8 is near optimum for most yeasts and at the same time inhibits bacterial growth. The important clinical fact to be noticed is that the pathogenic fungi grow best in a medium where the reaction is somewhat acid. Growth promoting qualities are also increased by the addition of salts and

other nutrients. Malt agar has been used with a reaction of pH 3.5 and pH 5.5.

Clinically it will be noted that the best requirements of fungi for growth are an acid medium and in the presence of nutrients including salts. The macerated skin between the toes is from this point of view an ideal medium. The sweat is acid and contains electrolytes as well as nutrients from the macerated skin. It is also to be noted that most of the medications used in treatment are of an acid reaction. Naturally good results should not be expected in treatment.

It was the author's clinical experience while serving at the McKay Memorial Research Hospital at Soap Lake, Washington in 1941 to observe the results of bathing in the waters of Soap Lake on cases of Buerger's Disease (thromboangiitis obliterans.) Culture of skin scrapings taken from between the toes in these cases were uniformly positive for fungi, whereas after bathing in the alkali water the cultures became uniformly negative. It appeared logical and in accord with the known facts concerning the microbiology of the fungi. They did not grow in alkali media and they disappeared after soaks in an alkaline bath.

The water of Soap Lake was examined and found to be highly alkaline, equivalent to a one third normal solution of sodium hydroxide. It was so highly alkaline as to cause second degree burns of the skin, similar to lye burns, when applied undiluted and for too long a period.

An equivalent solution of sodium hydroxide was then prepared as a stock solution and patients with ringworm of the feet or athlete's feet were treated with soaks in ascending concentrations from 10 percent to 35 percent of this stock solution. In a series of 15 cases of all degrees of severity and length of time the disease endured, the results were uniformly improved after soaks in this solution. The results are tabulated in the following Table.

Conclusion

1. The fungus of epidermophytosis grows best in an acid medium in the presence of electrolytes and nutrients.
2. These conditions are present in the sweaty areas between the toes and in the conditions of opposed skin surfaces.
3. Treatment with alkaline solutions was effective in improving the dermatitis and in suppressing the condition known as athlete's foot.

Table

Case No.	Day of Treatment										Result
	% 1st	% 2nd	% 3rd	% 4th	% 5th	6th	7th	8th	9th	10th	
1.	11	20	20	30	30						Recovered
2.	11		20	30	30						"
3.	11		20								"
4.	20	30	30								"
5.	11	20	30			30	30	30	30	30	"
6.	11		20	30							"
7.	11	20	30	30	30	30	30	30	30	30	"
8.	15	20	30	30	30	30					"
9.	25	35									"
10.	25	25	25								"
11.	25	35	35	35							"
12.	25	35									"
13.	25				25						"
14.	25			25							"
15.	25		25	35		35					"

Percent equals percent of dilution of one-third normal solution sodium hydroxide.

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MASSIVE PLASMA TRANSFUSION AND THE PATHODYNAMICS OF ACUTE LEUKEMIA

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In a recent report on low blood cholinesterase levels encountered in the leukemias[1] massive plasma infusion to raise these levels was mentioned. This resulted in some direct inquiries as to the therapeutic applicability of this procedure as well as some admonitions as to its dangers. Homologous serum hepatopathy (infectious hepatitis) and mercurial poisoning (from organic mercurials present in the presently available lyophil material) were cited as reasons why plasma should not be given.

Because of the number of the inquiries, it is deemed advisable to answer certain of the points raised in connection with massive plasma transfusion as applied to any of the malignant blood dyscrasias and to acute leukemia in particular. Such a discussion is timely in view of the very recent report of Schwind[2] that fresh plasma contains a factor which assists in the maturation of the aberrant leucocytes found in the myelogenous form of this disease. This finding promises to unlock the mystery of this hitherto inexplicable and apparently increasing dyscrasia.

The first point is the propriety of using an empiric agent (which we can no longer consider

plasma to be) in the malignant dyscrasias. Certainly one could hardly be deterred from using massive plasma infusion because of the dangers cited above. The experimental use of such potent bone marrow depressants as P^{32}, roentgen rays, thiourea and thiouracil and the nitrogen mustards has apparently been justified. I have informally seen some of the patients so treated; the illness appeared to be aggravated and death more rapidly induced. Elsewhere[3] the reasons for regarding marrow depressive therapy as a fallacy have been cited. In all the malignant dyscrasias we are dealing with marrow depression in the first place.

With regard to the dangers of the transmission of infectious hepatitis; this is a real one and exists wherever plasma or whole blood is used. Whether on this basis it should be withheld from an acute leukemic who is harboring an invariably fatal condition, is a point on which there could hardly be hesitation.

The point about the mercury content of the presently available lyophil material, which because of its recent release by the Red Cross for civilian use, is the form in which most plasma is now being administered, is one that merits discussion aside from the theoretic dangers of mercury poisoning. In massive plasma infusion, the latter is more real than when ordinary quantities are given but even so the dangers appear to be minimal[4]. However the unnecessary addition of mercury to plasma pools has posed another difficulty which appears when the pathodynamics of acute leukemia and the nature of the effectiveness of plasma are considered.

It has been customary to assume that the bone marrow in acute leukemia is "hyperactive" and that the acute leukemias were the exaggerated counterparts of the neoplastic chronic leukemias, where bone marrow activity must be subdued. The necessity for curbing the marked proliferative tendencies of the leucoblastic tissue *does* exist in chronic leukemias for the leucoblastic infiltration can crowd out a vital organ (viz., the bone marrow, brain and spinal cord) and thus lead to death. But exhaustive tissue examinations in the acute leucoses have shown that in the latter, this is not the case; in fact it is difficult to demonstrate any gross cause of death and we have come to the conclusion that the terminating modality in most cases of acute leukemia is an atopic-exudative form of "shock" state due to profound cholinergic intoxication.[5] As in acute anaphylaxis, parasympathetic phenomena are pronounced, heparin is poured out into the circulation[6] and death is the result of shock and purpura.[7]. From the pioneer work of Sabine[8] and the more recent contributions of Davis[9] we are in a position to designate the exact mechanism of the sequence of events occurring in acute luekemia. Sabine showed that the production of blood cholinesterase (that enzyme present in the blood which inactivates acetylcholine) is a bone marrow function. Where the marrow function is depressed as in pernicious anemia, the blood cholinesterase falls and the blood acetylcholine rises to the point where it may elicit toxic symptoms[9]. The blood cholinesterase activity is likewise reduced in all the malignant hematologic dyscrasias (acute leucoses, aplastic anemia, lymphogranulomatosis, idiopathic neutropenia and thrombopenia). The primary marrow depression signified, may result from a cholinergic episode[3] (burn, fright, trauma, poisoning or infection). Any cholinergic episode may result in systemic flooding by acetylcholine-like substances whose effect will vary with the constitutional "habitus" or predisposition of the individual but which rather uniformly produces temporary or protracted marrow depression. If marrow activity fails to replenish the blood cholinesterase, a cholinergic state with its vicious cycle of further marrow depression and blood cholinesterase reduction, becomes established. If such a shock state occurs in a leukemic type of reactor, the morphologic blood picture is misleadingly suggestive of marrow hyperactivity; actually the "leukemia" represents only the vicarious and futile attempt by the bone marrow to elaborate cholinesterase and counteract the cholinergic state.

In the precipitation of acute leukemia by one of the cholinergic episodes enumerated above, there must be several qualifying factors. Constitutional predisposition unquestionably plays a part. We know, for instance, that there are some individuals who react to a cholinergic episode by a reticuloendothelial or a lymphoid response. These may constitute the Hodgkins reactors; the matter is not so well clarified as is the case in acute leukemia. In the latter there may be undue sensitivity to cholinergic substances. That an initially depleted blood cholinesterase, at the outset, may be operative is suggested by a well-founded clinical observation. It is known that children who ultimately succumb to one of the acute leucoses have been pallid for a long time preceeding the precipitation of the acute phase of the disease. Pallor, with or without anemia, is a frequent accompanient of the cholinergic state.[10]

Pernicious and nutritional macrocytic anemias are not in a category with the malignant blood dyscrasias, though the blood cholinesterase is low[8,9]. In pernicious anemia, the bone marrow, given the proper factors (liver extract; folic acid) can elaborate this enzyme. In the malignant dyscrasias, the power of cholinesterase synthesis appears to be lost. The only hope of raising the blood cholinesterase and thus of neutralizing the cholinergic state would appear to be substitutive.

To this end, blood transfusion has been the method of choice. However on the basis of some unpublished work by the author's group, wherein it was found that the erythrocyte cholinesterase of transfused blood rapidly disappeared from the circulation whereas the plasma cholinesterase persisted, plasma in large doses (2000 c.c. per day) was used as a cholinesterase vehicle.[1] Four days of infusion were found necessary before an appreciable rise in the blood cholinesterase was produced. The abolition of the cholinergic symptoms which we observed to coincide with the rise in blood

esterase supports the thesis that the effective fraction of plasma *is* the cholinesterase.

Additional support for this point of view is inherent in Schwind's[2] study of the leucocyte "maturation" factor in plasma. This he found to be present in fresh plasma but absent from the gamma globulin fraction and from the lyophil material available commercially. The latter contains organic mercury (phenyl mercuric borate or merthiolate) which definitely inactivates cholinesterase. Cholinesterase is likewise absent from the gamma globulin fraction of plasma; small quantities are present in the (unheated) albumin fraction, somewhat larger quantities are found in the alpha globulin fraction and most of the original cholinesterase seems to be concentrated in the beta-globulin fraction. Studies with this fraction are now under way.

An examination of various plasma preparations yielded the information that it is not lyophilization that inhibits cholinesterase but the presence of the preservative mercury. The addition of mercury to plasma pools during processing was considered to be a necessary war-time measure but may now safely be dispensed with[4].

Since the experimental demonstration by Schachter[11] of the efficacy of cholinesterase in traumatic shock in dogs, the therapeutic use of plasma rather than of some oncotically active colloid, has been on a firmer basis. If cholinesterase is, in fact, the analeptically effective fraction of plasma it would be well to design future blood banking processes for the retention of this important constituent. In that connection, we have found "normal" plasma to vary widely in cholinesterase content. Since the determination of plasma esterase is a simple clinical laboratory procedure, it should be feasible to form pools of those plasmas of high cholinesterase content, preserve them either in the liquid state by adequate sterility precautions without the addition of organic mercury, or else dry them at low temperature, and ear-mark such lots for those conditions where the analeptic effects of cholinesterase are especially indicated. It is believed that some of the acute leucoses fit into the last category and it is conceivable that, by this means, protracted remissions may be secured.

Date	RBC x,10⁶	WBC x,10³	Hb*	Non-Filament Filament Ratio	Prothrombin Index	ChEb**	Plasma*** cc.
7/3/46						3.69	
7/9/46	2.69	4.6	48.0			3.63	
7/15	3.15	5.2	54.6	0.56	0.55	3.57	
7/24	3.30	8.7	62.2	0.53	0.50	3.61	2000
7/25					0.67		2000
7/26	3.27	10.2	58.4	0.42	0.87	3.64	2000
7/27	2.79	14.4	52.0		0.93	4.09	1000
7/28	2.80	12.3	56.0	0.28	0.90	4.06	
7/29	3.09	17.4	56.6	0.32		4.30	
7/30	3.15	23.5	56.0	0.46		4.14	
8/1						3.86	
8/5	3.28	41.7	58.2	0.63		3.84	
8/10						3.87	

(Legend for Table)

The numbers and percentage of mature granulocytes, the prothrombin index and the blood cholinesterase rose following massive plasma infusion though not in exact concomitance. Normal blood cholinesterase values (4 units and above) were maintained only for a short time following the infusion but the patient equilibrated at a higher level than had existed previous to the infusion. The clinical remission persisted for at least six months after which the patient was lost to observation.

* Hemoglobin in decimillimols/ liter (grams percent x 6)
** Blood cholinesterase in Alles and Hawes units/ c.c.
*** This lot of plasma assayed 1.6 Alles and Hawes units/ c.c.

Summary

The salubrious effects of plasma transfusion on the course of acute leukemia is analyzed and it is concluded that this may be due to the plasma cholinesterase content. On the basis of this thesis it is advocated that plasma banking and processing be so designed as to favor retention of the cholinesterase content of the material.

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* * *

Bazins disease, or erythema induratum, was first described in 1861. Other diseases described by Bazin include mycosis fungoides, acne varioloformis, acne keloid and hydroa vacciniforme, which later became Hutchinson's summer eruption. Reference to buccal psoriasis as Bazin's disease has been found.

Editorials

The Unnecessary Operation

The above subject has been written about and discussed at length many times. It is believed the last word has not been said. Proper surgical procedures for real disabilities and the removal thereof are most brilliant and beneficent in their immediate and permanent results.

We will have always the neurotic individual who has all sorts of imaginary symptoms, which resemble very closely organic disease. Needless to say surgical procedures on this type of patient have been disappointing in their results. These procedures are most often made by the occasional operator. Deep pressure over the ovarian region of a woman's abdomen will elicit a complaint of pain in a normal ovary. It is believed some surgeons are too quick to decide a pathological ovary is therein and should be removed. Opinion dictates a surgeon should be able to distinguish the normal just before menstruation. Otherwise a normal gland may be removed that will rob the woman of an internal secretion that is vitally necessary for her health and comfort. The retroverted uterus, functional disorder of the stomach and gall bladder have been subjected to unnecessary operation. Experienced surgeons soon learned the futility of these measures and abandoned their use, unless there had been definite previous attacks accompanied by iron clad indications that pointed directly to the particular organ involved.

It is believed that it is just as necessary to know when not to operate as it is to know when to operate. There are some well meaning men who lack experience and are unable to discriminate, who attempt to extend operative relief without sufficient clinical data and adequate pathological findings. There are some who will operate upon any one who will hold still. They are the type who operate for the fee and should be barred from all hospitals. A sharp knife in the hands of a neophite or an occasional operator, may result in the death of a trusting patient.

Neurotic simulates real pathology so closely that it may challenge the scrutiny and restraint of the most experienced surgeon. The experienced general surgeon has learned how to triange the neurotic. Not so with the enthusiastic specialist who too often subjects them to unnecessary procedure, which almost always results in failure.

Dysfunctions of the abdominal organs are so uncertain, the symptoms so vivid, the complaint so often repeated, many men fail to evaluate them properly. It is difficult to decline operation. It is believed the examiner should be thorough. Fortunately x-rays can isolate most stomach lesions. The intangible nervous system that complains continuously is the bugaboo and too often our pitfall.

Of the abdomen, the appendix (most of us regret to admit we are members of that filthy herd who still retain our appendix) is blamed most of all for the unnecessary operation. Chronic appendicitis means so little and is so easily said. Yet it may mean in the future history of a patient, an operation was made upon neurasthenic. Experience has taught us that it is rarely diagnosed in people who have a normal nervous system. Upon two occasions, the writer was greatly mortified at operation, when a small white cord-like obliterative appendix, incapable of producing symptoms of any sort, was found.

It is believed there is little reason for diagnosing chronic appendicitis in the absence of a history of acute or sub-acute attacks. Renal and ureteral stone may masquerade as appendicitis, so also may right lower lobar pneumonia. The latter was operated on for acute appendicitis by the writer before the advent of present day diagnostic facilities. When the constitutional symptoms are marked and the local manifestations are vague in any case relative to the abdomen, it is almost safe not to operate. An individual with a systolic blood pressure of one hundred, or a throbbing aorta should not have surgery unless it is imperative. Neurotics we have with us and they can of course have organic disease but it is believed they are more often the lure of the inexperienced surgeon and the occasional operator. Sometimes it is easier to diagnose what patients have than to diagnose that they haven't anything abnormal.

Rheumatic Fever

There is no doubt that rheumatic fever is of complex etiology, although the evidence is fairly conclusive that streptococcal infection of the tonsillar pharyngeal region plays a very prominent, it may be said an essential, part in its causation. Although almost everyone has throat infections with hemolytic streptococci and many frequently have such infections, yet rheumatic fever is a somewhat rare disease. While it is streptococcal infection alone which initiates rheumatic fever, host and environment factors

other than this type of infection play a predominant role in determining the onset of this fever. There are certain characteristics which stand out in bringing about rheumatic fever. Epidemological studies seem to show that poverty and bad housing are associated with this fever. Certainly it is characteristic of cold and temperate climates and is practically unknown in the tropics. Also it is argued by many authorities that there is an important hereditary influence in determining the occurrence of manifestations of rheumatism. In regard to rheumatic fever, it is still not feasible to provide a clear interpretation of all its characteristics. Bacterial hypersensitiveness may be considered and in this connection the tonsils may come in but this is rather a speculation. Climate is important. For example, streptococcal infections were very prevalent in this country during the winter of 1943-44 and in the cold regions of the North there was a high incidence of rheumatic fever while, in Southern California and other warm southern areas, there was practically none. This editorial touches only the fringe of a really big subject.

Pulmonary Tuberculosis

Judging from evidence and experience, occupation is the outstanding environmental factor which causes pulmonary tuberculosis, especially those occupations associated with lung damage by the inhalation of siliceous dust. The high incidence of tuberculosis among the Cornish tin miners, workers in cutlery and like trades, is too well-known to need emphasis.

While it is difficult to demonstrate the tubercle bacilli in dust even if it is collected from rooms in which open infection cases work, the fact remains that the incidence of phthisis is usually higher when one has a dusty occupation.

The mortality from tuberculosis among African negroes working in the Witwatersrand gold mines, was much higher than among the members of the same race living under native conditions. Some dusts bear a special relationship to the incidence and development of pulmonary tuberculosis. In 1938 it was reported to the British parliament, that in Sheffield, the death rate from respiratory tuberculosis was four times higher than the death rate for all persons over fifteen years of age. Of course, the personal equation must be considered. An individual may inherit a susceptibility to pulmonary tuberculosis, which dusty, infected air may develop.

It is difficult to estimate with any degree of certitude the danger of dust to normal health. A supposedly harmless dust may indirectly spread tuberculosis, by starting a chronic catarrh in a person with an undiscovered active lesion. Although the influence of diet on the production of phthisis may be almost nil in the prevention of the disease, it probably plays a part in building up the resistance of the body against the attacks.

Again, it appears to be definitely shown by British statistics, that there is a high incidence of pulmonary tuberculosis among those whose occupations are associated with the undue use of alcohol: barmen, brewers and wharf labourers. In Britain the atmosphere of many of the public houses is somewhat unhealthy, which may aid in bringing out latent infections of pulmonary tuberculosis.

Numerous reports have shown that dormant tuberculosis may become active when a simple silicosis develops. W. F. Wells, in this country, has shown that a droplet infection is important in the spread of disease, including pulmonary tuberculosis. The importance of working conditions is obvious if the literature of the subject, which is vast, is carefully analyzed. Light work under bad conditions may be more harmful than heavy work under good conditions, and heavy work under poor economic conditions is a baleful combination. Once more, the point may be stressed that the personal factor is very important, that the predisposition or susceptibility to pulmonary tuberculosis is a main factor in its production, and that this point should be borne in mind when efforts are made to prevent tuberculosis.

The Common Cold

A cold is frequently rather an uncommon cold that what is termed the common cold. For example, an influenza cold may be termed an uncommon form of cold if it is correct to call it a cold. The common cold is, or may be, a single etiological entity. There is said to be dependable evidence that certain colds are due to a filterable virus. There is a fairly definite epidomology of colds while extensive data comes from some American surveys which go to show that taking average Americans, each have 2 to 5 colds a year, with a concentration of attacks in the colder half of the year. Evidence shows that an infectious agent is involved but as is well known, there are great variations in the susceptibility of different individuals. No method of immunization has been developed which will prevent colds. Psychological factors influence their production and allergic factors may play a part.

ALFRED FROEHLICH

On the occasion of his seventy-fifth birthday

By SOLOMON R. KAGAN
Boston, Massachusetts

Dr. Alfred Froehlich occupies a high place among the great pharmacologists of our time. He has done pioneer work in this field, made significant discoveries, and flourished for nearly half a century as investigator, author, experimenter and teacher in his specialty.

Dr. Froehlich was born in Vienna on August 15 1871. He received the degree of Doctor of Medicine from the University of Vienna in 1895. In 1908, he became lecturer on pharmacology and toxicology at the University, associate professor in 1912 and professor in 1919. He also conducted scientific investigations in various countries. In 1902-1903, 1906, 1912, and 1930 he worked at the Biological Laboratories in Naples (Italy); in 1905, at Roscoff (Brittany, France); in 1922, at Heligoland (Germany); in 1931-1932, at Thihany (Hungary); and in 1944, 1945, and 1946 at Medical Biological Laboratories in Woods Hole (Mass.). In 1939 he settled in the United States and has been associate in pharmacology at the Jewish Hospital in Cincinnati, Ohio.

He was a distinguished student both in high school and later in Vienna Medical School. His health, however, was delicate. Due to unfavorable circumstances, he developed in later life a light form of tuberculosis of one lung, but, through outdoor sports and hygienic measures, he recovered completely.

His father was a merchant. His mother was a lover of music, and young Alfred inherited this trait. When he was five years old, an incident occurred that influenced his whole life. A private teacher, a scientist who eventually became professor of the Vienna Academy, was tutoring his older brother, and on one occasion brought along a microscope in order to show the children some of nature's miracles. After his first look into that mysterious tube, where he saw red and white blood cells, young Alfred became fascinated. Then and there he decided to become a scientist.

Following graduation Dr. Froehlich started work in the department of Internal and Nervous Diseases at his alma mater, and became interested in theoretical and experimental problems. A pioneer in his specialty, an original thinker with a wide vision, he has made about 200 contributions to physiology and pharmacology over a period of forty-six years.

In 1900 Dr. Froehlich studied innervation and function of the anal and vesical sphincter-muscles. He had come across the classical work of Langley and Anderson. Thus, he was the first in Vienna who gained knowledge of what later became universally known as the vegetative (sympathetic autonomic) nervous system.[1]

In 1901 he went to Liverpool, England, for half a year, to study brain-physiology under the outstanding physiologist Sir Charles Scott Sherrington. This event served as the turning point in his scientific researches. His horizon in scientific investigations was considerably widened. At this time he joined Dr. Harvey Cushing, who later became the great American brain surgeon. When Dr. Froehlich returned to Vienna, he described the *Case of a Hypophyseal Tumor without Acromegaly*, which became known as Adiposo-genital Dystrophy (Froehlich's Syndrome).[2]

In 1904 Dr. Froehlich made studies in J. N. Langley's Physiological Laboratory at Cambridge, England.

In 1905 he turned to a new field of experimental pharmacology and became assistant to the greatest pharmacologist of his time, Harry Harst Meyer. Later he collaborated with Dr. Otto Loewi (the Nobel prize winner, now in New York City) on the pharmacology of the autonomic nervous system. They discovered that a more intense effect is produced by adrenalin (epinephrine) when following the administration of small doses of cocaine. As a result of this important discovery the common use in medical practice of a combination of adrenalin and cocaine was established.[3]

In the same year Dr. Froehlich, in collaboration with the neurologist L. Frankl Hochward, proved on rabbits that the uterine muscles are highly sensitive to hypoglysin (posterior pituitary extract) towards the end of pregnancy and for a short time after delivery. Froehlich and Hochward demonstrated that a single injection of hypoglysin is effective on the non-pregnant uterus, but produces powerful contractions of the normal labor type, and they recommended to obstetricians the use of hypoglysin during delivery. Dr. J. Kofbauer (now in Cincinnati) was the first to follow their advice. Now hypoglysin during delivery is generally used throughout the world.[4]

Dr. Froehlich and H. H. Meyer investigated the contracture of striated muscle-fibers under the influence of tetanus-toxin. They showed that electrical variation can be seen during the contraction of the muscles when using the swing galvonometer, but none can be observed when the powerful unstriated muscle remained in lasting contraction.[5] In a similar way, the permanently or shortened striated muscle in tetanus toxin poisoning shows no electrical variations in this kind of muscular contracture. They also succeeded in producing tetanus muscle contracture in cold-blooded animals.[6]

Another important fact was revealed in their findings—that the path for visceral pain takes the same course as does pain originating in skin and muscles, namely through the posterior spinal roots. In 1911 Dr. Froehlich was able to produce a condition which later became known as "tachyphylaxy" By using suprarenin, he produced within a short time (about one hour), a condition in which twenty times or more of the usual dosage of the highly

active epinephrine was tolerated following intravenous injection without any visible effect on the heart.[7]

The problem of how to augment the efficiency of drugs has for a number of years dominated the attention of many well-known pharmacologists, and many positive results have been achieved. As an illustration may be mentioned the combination of cocaine-cutenaline introduced by Froehlich and Loewi. In 1921 Dr. Froehlich and Dr. Emil Zak (now in New York City) made experimental researches in this respect: i. e., increasing the effect of certain drugs.[8] After preliminary studies in the capillary circulation (Frog's tongue, Frog's web, mouse ear) they found that the group of purines (among which the least harmful was theophylline which showed no undesirable side-effects) intensifies drug activity by means of increasing the permeability of tissues, which fact was established by using certain dyes.[9] They proved that certain drugs which normally do not enter the central nervous system, did so under the influence of theophylline.

Dr. Froehlich continued analgous studies after he came to this country. He and Dr. Arthur Mirsky, Director of the May Institute for Medical Research of the Jewish Hospital in Cincinnati, have made extensive investigations concerning the effect of theophylline. They have demonstrated that the convulsant dye, acid fuchsin, acted as such only on very young rats and had no effect whatsoever when the rats reached a certain degree of development. They, however, brought back the convulsive effect of acid fuchsin by increasing permeability and entrance of the drug into the central nervous system. Theophylline, therefore, acted as a rejuvenizing factor, bringing back mature tissue to a young state. They obtained similar results with bile.[10]

In order to elucidate somewhat this mysterious effect of theophylline, Dr. Froehlich used in his experiments at the May Institute and at the Medical Biological Laboratories in Woods Hole, Mass., the little known phenomenon of the so-called heat narcosis. Aquatic animals (tadpoles, small fish, frogs) lose voluntary and reflex muscular activity when they are slowly warmed at a "critical" point of temperature. In cold water these activities return after the lapse of a few minutes.[11] He found that under the influence of theophylline this "critical" point in heat narcosis is considerably lowered and at the same time the tendency to asphyxiation is increased. As this theophylline effect can be prevented by quinine, he believes that an increased demand for O_2 might be held responsible for the great increase in tissue permeability.[12]

Finally, through experiments on small crustacea performed with water from the natural radioactive springs of Iasteins in Austria, Dr. Froehlich was the first to find out that radium emanation (radon) exerts a favorable effect on the frog heart and prolongs life in the absence of O_2.

Dr. Froehlich has advanced the knowledge of physiology and pharmacology. Some of his discoveries have been of great significance, and are accepted by the profession throughout the world.

I join Dr. Froehlich's numerous disciples, friends and colleagues in wishing him many more years of research in his chosen field. Froehlich ad multos annos!

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176 Seaver St.

Growth Pattern Of Children

In a recent speech at the Chicago, Ill., Museum of Science and Industry, Dr. Arnold Gesell, director of the clinic of child development at Yale University's School of Medicine, said that the foundation and framework of human personality are laid down in the first ten years of life. Parents, therefore, should not lose faith if the child of two and a half years of age grabs a toy from a playmate.

While admitting that no two individuals are exactly alike, it was emphasized nevertheless that all normal children tend to follow a general ground plan of growth which is characteristic of a cultural group. Every child has a unique pattern of growth, but that pattern is variant of a basic ground plan which is itself determined by the genes. Environmental factors support, inflect, and modify, but they do not generate the progressions of development. When the infant enters the world, he already is an individual with growth potentialities which are distinctly his own.

Studies conducted at Yale have shown that the higher mental manifestations of child life also are profoundly subject to laws of development. These studies indicate that the foundation and framework of human personality are laid down in the first ten years of life by processes of growth which continue with new intensity throughout the teens.

MEDICAL ESSAY

Euthanasia

B. LIBER
New York

We all know cases that would benefit if euthanasa were legalized and we would like to co-operate with the society, now composed of physicians and laymen, which fights for the proper legislation.

But the powerful arguments of our mind are not as convincing as the weak, sentimental reasons by which we are moved.

Perhaps we are swayed to the wrong side by our own instinctive desire to live; by acquired medical teachings to stubbornly wage war against disease where we meet it, by all means and to the last gasp.

In early childhood, long before we realized the meaning of this mystery of life and death, we may have innocently and naively asked the beloved grandma: "Granny, when will you die?"

Later, however, we learned through many experiences about the inflexible obstinancy of life. For instance, by watching the downtrodden grass and weeds on beaten paths try again and again to lift their blades toward the blue. Or by reading about the vitality of hunted, wounded and trapped animals which, in their despair, escaped from their cruel pursuers leaving the tail or a leg.

Or, perhaps, as in this writer's childhood, by committing to memory and to his deeper, ineffaceable feelings, such stories as Lafontaine's fable about the miserable individual who calls Death: "Come, thou who seemest so beautiful, come at once and put an end to my cruel fate!" But beholding his would-be benefactor, he exclaims: "What do I see? Remove this hideous object! He horrifies and frightens me," and : "Oh, come not nearer, go away! I prefer to be a legless, armless cripple, but to be alive." (Ed. Note: Free translation.)

Still later the writer became acquainted with the Hebrew personage of Job, whose faith in God and hence his desire to live triumphs over his squalor, wretchedness, filth and agony.

Of course, the more human and realistic, albeit more poetical, Greek mythology swings to the other side. It induced the Greeks suffering from incurable ailments, to entreat Thanatos, the god of death —by the way, a twin brother of Hypnos, the divinity of sleep—to free them from their misery. (Interestingly enough, this same Thanatos was also the healer of unendurable ills, as no affliction can reach those who are in his soothing hands.)

And often when the writer was a medical student, still an adolescent, the for and the against were struggling within as to what was best to do. He knew from biology and geology that, from a loftier viewpoint, for nature in general, death was not less important than life: nobody and nothing really ever disappears, everything and everybody is just chemically transformed.

One incident regarding the tenacity of organic life taught him more than anything else. It will never be blotted out from his memory. He learned at that occasion that between life and death there was but one short step, but that the difference between them was enormous.

In a large ward of a hospital service of internal diseases, he was in charge of eight beds—too many for such a youth. A would-be suicide case was brought in to his section. The patient was unusually tall—his feet exceeded the length of the standard bed, protruding through its iron bars. He had a large frame, an athletic chest and a handsome face. The student had instructions from his superior, the chief's assistant. He knew all about artificial respiration, that is, as practiced in those days, before the advent of the Schaefer method. He was left alone for several nights with this death-seeking giant, both of them surrounded by a screen. Opium was the poison that had been taken. Enough to make the distressed man very drowsy and semiconscious, but not enough to kill him. And the battle between medicine and death began. It was so easy to let the fellow die. But there were orders and they had to be obeyed.

The night was silent. Even the nurse had reclined. A distinct fear exhaled from the nearness of death. To be entirely alone with this big body, face to face with this black, shaggy head and the bushy brows, and with eyes that opened partly at rare intervals, was terrifying to this inexperienced school-boy. To touch his arms, to try to make him breathe or to wipe the frothy saliva from his mouth and throat and parched lips, was a horror. Sometimes the stillness was interrupted by a mumbling which sent shivers through one's back. Whenever some words could be made out, they said: "Lemme alone, I wanna die." And they were accompanied by a slang and obscene expression and by a vague gesture which seemed to drag one along into the abysmal depth. Finally, the apprentice lost: Thanatos won. However, due to this brutal interference, it was not the sweet and kind euthanasia.

True: very frequently, instead of exclaiming "How can one have the heart to let a patient or a wounded person die?" one may be inclined to ask "Can one be so heartless as to allow this sufferer to live?"

But there is the question: Why doctors?

Why should we be in the forefront of this movement? The answer is, obviously, because we are so close to the entire matter. But the lay victims and their families and friends, the laymen as a whole are or should be more concerned. Physicians should be called once the law is in existence, when necessary, as experts.

Why should we, medical men, take it upon ourselves to do from the beginning, to actually prepare, the "dirty job", as it will be undoubtedly called, even though it will be a noble job? Are we not associated enough with sickness and death, as it is? Are we not symbolizing illness in the minds of so

many people, in everybody's mind? Are we not, indeed, identified with tormenting pain—unintelligently, it is admitted, but, nevertheless, in their thoughts we have some mysterious affinity with anguish.

To give but one common example: The extremely popular, but vicious saying "an apple a day keeps the *doctor* away" has never been changed into "keeps sickness away". The doctor, for ages and ages, has been representing and personifying illness.

Somebody might reply: "But the public or a part of it also thinks of us in terms of helpers and saviors". Then why spoil our role? Why not leave in the public judgment some good impressions about us and counteract the unpleasant ones which are attached to our profession?

Then comes the question whether we are sure to be regarded as morally reliable. Of course, the same may be said about lawyers who are also likely to figure among the euthanasia commissions and authorities. But we are more interested in our own position. The sins and mistakes of a minority might besmirch the entire medical fellowship. No doubt, there are a good many splendid specimens among us. But we have always had barnacles infesting our fraternity and we are not free from them now. In ancient Rome medicos had a bad name for a long time. Indeed, for several hundred years no doctor was allowed to establish himself in the city of the seven hills. And later, when medicine could be practiced there, Cato, famous as an opponent of new things, fought against it with vehemence and succeeded in expelling it again for some time. Nor have we heard of German physicians failing to co-operate with Hitler and sacrificing themselves to medical humanitarian ideals. We cannot, therefore, be certain whether some of our black sheep might not derive a personal gain from "mercy killings" and so vilify and defame the good name of a well-intentioned, hard-working profession, devoted to the welfare of its patients.

65 West 95th Street

Control of Respiratory Diseases

Dr. Colin MacLeod, New York University, College of Medicine, in a Symposium at the Army Medical Center, reported that substantial advances toward control of the common respiratory diseases, colds, influenza and pneumonia, may be close at hand, due largely to facts developed from large scale army experience during the war.

The indications are that these maladies can be substantially reduced through a combination of immunization with antigens already available and a lessening of sources of infections.

This whole group, however, still present puzzling problems for which medical science gradually is finding answers. It is a curious fact that certain virus diseases, the group to which colds and influenza belong, never ocurr more than once in the same individual. That is, one attack usually confers permanent immunity. Such maladies are chicken pox, mumps, measles and smallpox. But apparently only short period immunity, at the best, is conferred by antigens against the respiratory diseases.

The outstanding difference, he pointed out, is in the incubation period. The group against which permanent immunity is obtained have incubation periods ranging from 7 to 26 days. The periods for colds and influenza are from one to three days. This brings into the picture the so-called anamestic or secondary response. The purpose of an antigen is to bring about the production of antibodies to the disease by the body itself. Certain cells apparently are detailed for this work. An antigen rouses them to action but this requires from seven to ten days.

Thenceforth, however, these cells remain on the alert. The response to a second and very much smaller dose of the antigen will be much greater and much quicker, generally in from three to six days.

Germs of the disease invading the system act precisely as a booster shot of the antigen. The cells which manufacture antibodies come into action at once. But in the case of the respiratory diseases with their very short incubation periods even the much faster reaction is not fast enough. The malady can become established before it can get under way.

Thus apparently there is little hope of immunizating a population against colds or influenza by shots in the arm. It would be an unimaginably big job to keep everybody adequately immunized by repeated antigen injections all the time.

It has been shown recently, for example, that the point of attack of the influenza virus is the mucous membrane of mouth and nose. When one has been immunized a small amount of the antibodies thus produced find their way to this membrane and attack the germ at its point of entrance. However, this is only from a tenth to a twentieth as much as is circulating in the blood stream at the same time. To prevent flu, other than by constant and frequent vaccinations, it is essential that the amounts of the germ finding their way to the respiratory passages be insufficient to overwhelm the minute quantities of antibody present. Thus, to insure any sort of protection, the sources of infection must be kept at a low level. One is more likely to catch flu in an office where everybody else has a severe case than in an office where only one man has a mild case.

Thus, every immune person serves as a wall against the spread of the disease.

This has been demonstrated in an extensive army experiment with pneumonia, a bacterial rather than virus disease but which apparently follows about the same laws so far as immunity is concerned.

News Items

Health Institute Grant.—The National Institute of Health has renewed its grant of $28,512 to the Industrial Hygiene Division of the University of Colorado School of Medicine to continue research in determining the effects of cadmium and various heavy metals on industrial workers.

Cancer Institute Enlarges Aid Program.—Dr. Thomas Parran, surgeon general of the U. S. Public Health Service has announced that the National Cancer Institute is now prepared to give aid to medical schools for further development of courses in cancer for medical students.

The new program is designed to place greater emphasis upon the intergration of cancer instruction in the total undergraduate curriculum. The deans of all medical schools have been advised that the National Advisory Cancer Council is prepared to receive applications for financial assistance in expanding their cancer teaching programs. Grants will range from $10,000 to $25,000 per year depending upon the activities to be undertaken.

The committee of medical educators, whose report resulted in the new program is headed by Dr. Frank E. Adair, associate professor of clinical surgery, Cornell University School of Medicine, New York.

U. of Ill. Physical Environment Laboratory.—The University of Illinois recently broke ground for the erection of a $400,000 laboratory for the study of physical environment in health and disease. The laboratory, to be known as the Aero Medical and Atmospheric Institute, will be equipped with apparatus for the study of aviation medicine, and the study of cold, heat, and barometric changes of the body.

The Institute will train men for research and other types of work in the armed services. Problems of interest to civilian aviation also will be investigated, as well as the effect of climate on persons suffering from rheumatism and heart and lung diseases.

The building will be constructed in the center of the campus quadrangle, adjacent to the University's 483-bed Research and Educational Hospitals and the college of medicine. Upon completion, it will include a rectangular chamber, a large cylindrical chamber for work with human beings, three small animal chambers with common lock, three pressure units, utility extensions, a cold laboratory which can be automatically controlled to within one degree, two air conditioned rooms for diagnosis in connection with peropheral vascular diseases, five rooms for hospitalization, and five rooms for research.

Hormone Price Slash.—Price reductions as great as forty-seven percent in the cost of pure, crystalline male and female hormone preparations have been announced by Schering Corporation of Bloomfield and Union, New Jersey. Both the 10 mg. and the new 25 mg. oral form of the male sex hormone, Oreton-M (methyltestosterone U.S.P. XIII) are available in unlimited quantities at this saving.

Progynon-DP, alpha-estradiol dipropionate, preferred by some physicians for its long-lasting effects, has also been greatly reduced in cost.

Winthrop-Stearns Inc.—Formation of Winthrop-Stearns Inc. as a new subsidiary to integrate the major pharmaceutical interests in the United States of the parent company was announced recently by Sterling Drug Inc., through James Hill, Jr., president.

The new company, Mr. Hill said, will conduct the business hitherto carried on by Winthrop Chemical Company, Inc., organized by Sterling in 1919 and now being liquidated, as well as the pharmaceutical operations of the Frederick Stearns & Company Division, Detroit, organized in 1855 as Frederick Stearns & Company. A similar subsidiary to take over Winthrop and Stearns' Canadian business will be formed in the Dominion as soon as legal requirements are completed.

Dr. Theodore G. Klumpp has been elected president of Winthrop-Stearns Inc. Besides Dr. Klumpp other officers of Winthrop-Stearns Inc. include: Dr. F. J. Stockman, Dr. Martin Lasersohn and Dr. Justus B. Rice, vice-presidents; and Dr. Harold L. Hansen, control laboratories.

Orthopedic Research.—A comprehensive multiple research fellowship on orthopedic appliances has been established at the Mellon Institute, Pittsburgh, Pa., by the Sarah Mellon Scaife Foundation of that city. The program will be planned and carried out for the benefit of mankind under the guidance of orthopedists and with the cooperation of leading organizations in the field as well as of manufacturers of orthopedic appliances. The fellowship will conduct broad scientific investigation and development relating to such appliances, particular attention being accorded to problems of mechanical design, improvements in materials of construction, and methods of fitting braces and similar orthopedic devices.

John L. Young, Ph. D., heads the program as senior fellow while the medical advisory committee of the fellowship is under the chairmanship of Paul B. Steele, M. D., professor and head, Department of Orthopedic Surgery, School of Medicine, University of Pittsburgh. The other members of this committee at the inception of the work are John A. Heberling, M. D., associate professor of Orthopedic Surgery, and Carl C. Yount, M. D., assistant professor of orthopedic surgery in the same institution.

Veterans in Training.—One in every 25 disabled veterans in training under the Vocational Rehabilitation Act (Public Law 16) is studying some phase of the medical field, ranging from laboratory technician to physician, Veterans Administration said.

According to a VA sampling of the records of some 229,000 handicapped ex-servicemen and women in training on May 1, 9,029 veteran-trainees were enrolled in medical, dental, pharmaceutical schools and the like.

A breakdown of the medical trainees shows that of these 1,529 were in training as physicians, 983 as dentists, 1,354 as pharmacists, and 2,626 as laboratory technicians. Opticians, optometrists, chiropractors and veterinarians absorb the remainder of the list.

NYU Extends Facilities.—New York University College of Medicine facilities recently became available to suburban and rural hospitals as twenty-four doctors from outlying districts took up studies in the Post Graduate Division under a new Regional Plan. Designed to bring to independent, non-teaching hospitals the advantages of a working relationship with a university medical school, the plan will make possible a continuing process of education to house and attending staffs of affiliated hospitals. Emphasis will be placed on the training of interns and residents.

Residents of affiliated hospitals will have the privilege of spending an academic year at the College. Affiliated hospitals will be responsible for the maintenance of the student-doctors but there will be no tuition fees. Affiliated hospitals may also request the attendance once a month of a member of the faculty of the College for participation in a conference, a seminar, ward round or other exercise desired by the hospital.

Grasslands Hospital, Valhalla, N. Y., maintained by Westchester County, will send a contingent of five doctors to the sessions of the new plan, the largest delegation from any of the participating members. Hospitals affiliated in the plan, besides Grasslands, are: New Rochelle Hospital, also of Westchester County; Flushing Hospital and Dispensary, Flushing, Long Island; Monmouth Memorial Hospital of Long Branch and Fitkin Memorial Hospital of Neptune, both of New Jersey; North Country Community Hospital, Glen Cove, Long Island, and St. Luke Hospital, Newburgh, N. Y.

Highlights of the new plan are that the resident-enrollee must return to the accredited hospital for at least one more year as a resident after completing the basic science training, that the hospital fulfill all requirements of the American College of Surgeons, and that a comprehensive educational program for the house staff is carried out locally by the hospital itself. Interns, junior attending physicians and surgeons also will participate.

Stricter Regulation for Barbiturates.—Because the barbituate problem in New York City has special aspects not satisfactorily covered by New York State law, new and stricter regulations governing the sale, distribution and dispensing of barbituates were enacted recently by the Board of Health.

Under the new law, which goes into effect on November 1, 1947, barbiturates must be sold on prescription only, and no prescription for barbiturates may be refilled unless the doctor orders such refilling in writing on the prescription, and specifies the number of times the prescription may be refilled and the intervals of refilling.

University of Illinois Admissions.—Although applications for admission to the University of Illinois college of medicine for 1947-48 have reached an all-time high, Dean John B. Youmans has indicated that the school will be unable to increase its enrollment because of limited classroom and hospital clinical facilities.

The college can only enroll 630 students.

One thousand and thirty-two candidates have been interviewed by the college of medicine with 167 accepted for admission. A total of 719 residents of the state of Illinois were found qualified for admission. All qualified applicants compiled averages of 85 percent or better for the three-year pre-medical college course.

Infantile Paralysis Fund Fellowships.—Twenty-five men and women in fifteen States, the District of Columbia and Alaska have been offered graduate fellowships in health education financed by the National Foundation for Infantile Paralysis March of Dimes Funds.

In addition to nine months of academic study at an accredited school of public health starting this September, each Fellow will have three months of field training in a health department under supervision of a public health educator. Of the 21 persons who have accepted the award, 17 will receive the Master of Public Health degree and 4 will receive the Master of Science in Public Health degree, following satisfactory classroom work and field training.

The award winners, four of whom are veterans, were chosen from more than 340 candidates who submitted applications to the Committee on Training of Public Health Personnel of the Public Health Service.

The membership of the Health Education Fellowship Awards Committee is as follows: Dr. C. L. Williams, Sr., U. S. Public Health Service, Chairman; Dr. Ben W. Miller, American Association for Health, Physical Education and Recreation; Dr. Frank Stafford, U. S. Office of Education, Federal Security Agency; Dr. A. L. Van Horn, Children's Bureau, Federal Security Agency; Dr. G. M. Wheatley, American Public Health Association; and Miss Catherine Worthingham, National Foundation for Infantile Paralysis.

Grants for Nutritional Studies.—According to Dr. Robert S. Goodhart, scientific director of the National Vitamin Foundation. four grants-in-aid amounting to $32,800 have been voted by the foundation for nutritional studies. Awards were approved by the Board of Governors effective July 1, 1947. Additional financial grants will be announced at the foundation's semi-annual fall meeting.

Social Work Institute Held at Rome, N. Y.—Social workers from the up-state hospitals and schools of the New York State department of mental hygiene and representatives of the state departments of education, health and social welfare met recently at Rome State School, Rome, N. Y., for the first in a series of four one-day institutes on social work.

Special topics slated for discussion were: psychological investigation of mental defectives, the socially adjustable and the socially maladjusted mental defectives, social readjustment of the institutional defective, community relations, and coordination of social services. Speakers include Dr. James P. Kelleher, director of Rome State School; Dr. Theodore Baum, Joseph Wissman, and Roy F. Woodbury, executive secretary of the Council of Social Agencies at Utica. Among those leading discussions were Dr. George F. Etling and Dr. Ward W. Millias, assistant directors of Rome State School.

University of Illinois Postgraduate Division.—Establishment of a postgraduate division at the University of Illinois college of medicine for administration of widely differing kinds of advanced teaching was announced recently by Dr. John B. Youmans, dean of the college of medicine. The new division is designed to improve the character and quality of postgraduate teaching. It will facilitate also the extension of postgraduate teaching to physicians residing outside of the Chicago area, correlate all postgraduate courses in medicine offered at the Chicago Professional Colleges. The University has offered advanced medical courses for many years, and recently has expanded its postgraduate program for veteran physicians returning from service. Instruction has been conducted by individual units and departments.

At least eleven courses will be offered by the postgraduate division during the 1947-48 school year. Courses are expected to include instruction in ears—nose—throat, diseases of the eye, basic neuropsychiatry, basic medical sciences, dermatology, pediatrics, and allergy.

Most of the classes will be conducted for nine months duration, although several short courses will range from two to twelve weeks.

More than one hundred and fifty physicians received instruction in the postgraduate courses last year. The program is conducted separately from the graduate school.

New Bayer Plant.—The "world's largest and most modern plant devoted exclusively to the manufacture of aspirin", built for The Bayer Company Division, Sterling Drug Inc., was officially opened recently at Trenton, New Jersey. Costing $2,500,000 to build and equip, the new plant has a production capacity equivalent to 60 percent of current United States consumption of packaged aspirin tablets.

Guests representing the drug industry, the community, the public and other industries, saw the plant put into full operation for the first time after three months of "trial runs." In addition to inspecting the plant, they viewed an exhibit in the control laboratory depicting more than seventy tests to which the raw materials, aspirin powder and finished product are subjected before Bayer Aspirin is released for distribution.

Public Health Research Fellowships.— The Surgeon General of the U. S. Public Health Service has been given the authority to establish and maintain research fellowships intended to promote the training and development of investigators in the field of medicine and related sciences.

Types of fellowships awarded and stipends attached thereto are 1. A predoctorate research fellowship at the Bachelor level, available to qualified applicants who have a Bachelor's Degree carrying a stipend of $1,200 for successful applicants without dependents and $1,600 per annum for this fellowship awarded to persons with dependents. In addition, the tuition fee is paid by the U. S. Public Health Service. 2. A predoctorate research fellowship at the Master level, available to qualified applicants holding a Master's Degree or its equivalent in graduate training. This fellowship carries a stipend, in addition to tuition fees, of $1,600 for persons without dependents and $2,000 for persons with dependents. 3. A postdoctorate research fellowship awarded to qualified persons holding a Doctor's Degree in medical or related fields. This fellowship does not provide tuition fees but carries a stipend of $3,000 per year for Doctors without dependents and $3,600 per year for those with dependents. An increase of $300 each year is granted to those Doctorate Fellows who are reappointed and 4. Special research fellowships are awarded to applicants who qualify for a postdoctorate fellowship and in addition have demonstrated outstanding ability or who possess specialized training for a specific problem. This fellowship does not carry a set stipend but is determined in the individual case.

Fellowships are awarded for one-year periods and may be renewed. Except in unusual circumstances, Postdoctorate Fellows are not reappointed for a third year. Applications are acted upon and fellowship awards are made at approximately three-month intervals. Applications must be made to the Division of Research Grants and Fellowships, National Institute of Health, Bethesda 14, Maryland.

Personal—Announcement has been made of the promotion of *Dr. Percival Bailey,* of the University of Ill. faculty, to the rank of distinguished professor of neurology and neurological surgery at the University.

Dr. Paul R. Hawley, chief of Veterans Administration Department of Medicine and Surgery, has been awarded an honorary fellowship in the American Association for the Surgery of Trauma, it was announced today.

Dr. Derrick T. Vail, Professor of ophthalmology at Northwestern University, and Consultant to the Army Medical Department was recently awarded the Legion of Merit for outstanding services as senior consultant in ophthalmology in the European Theater. The presentation was made by *Major General Paul R. Hawley,* now chief medical director of the Veterans Administration, who was chief surgeon of European Theater of Operations during the war.

The appointment of *Dr. Charles A. R. Connor* as medical director of the American Heart Association was announced today by *Dr. Arlie R. Barnes,* president of the Association. Dr. Connor succeeds *Dr. David D. Rutstein* who recently resigned as medical director to take the post of professor of preventive medicine at the Harvard Medical School.

Dr. Carl Heller, associate professor of physiology and medicine of the University of Oregon Medical School, addressed a recent meeting of the Schering Scientific Committee in Bloomfield, New Jersey. Dr. Heller was enroute to England where he planned to attend the first postwar International Physiological Congress, at Oxford.

Dr. Guy W. Brugler, of Cleveland Heights, Ohio, has been named director of the Children's Hospital, of Boston, and the proposed $10,000,000 Children's Medical Center. He succeeds *Dr. Stanton Garfield,* who has been acting director of the institution, the nation's only General Hospital for Children.

The death of *Dr. John Herr Musser,* professor and head of the Department of Medicine at Tulane University School of Medicine at his home in New Orleans, has been announced.

The retirement of *Dr. E. D. Friedman* as chairman of the department of neurology at New York University College of Medicine has been announced. He will assume the title of professor emeritus and will retain one of the most important of his staff appointments, neuropsychiatrist to the Psychiatric Division at Bellevue Hospital.

During World War I, Dr. Friedman served as contract surgeon in the U. S. Army and during World War II was a lecturer at the New York University School of Military Neuropsychiatry. He is a diplomate of the American Board of Neurology and Psychiatry and a member of the American Neurological Association, the Association for Research in Nervous and Mental Disease and the Author's Club of London, England.

At the recent annual meeting of The American Dental Association in Boston *Lt. Colonel Joseph L. Bernier,* chief of the Dental and Oral Pathology Section of the Army Institute of Pathology was elected to Fellowship in the International College of Dentists. Lt. Colonel Bernier is a Charter Fellow of and Secretary of the American Academy of Oral Pathology and a Fellow of The American Academy of Periodontology.

OBITUARY

Dr. William Seaman Bainbridge

One of the oldest contributors to MEDICAL RECORD, Dr. William Seaman Bainbridge, surgeon and international authority on cancer, died in Danbury Connecticut, on September 23rd. Dr. Bainbridge was seventy-seven years old.

Dr. Bainbridge was born in Providence, R. I. He was a graduate of the Lake Mohegan Military Academy and the College of Physicians and Surgeons of Columbia University, Class of 1893. From 1900 to 1906 he was professor of operative gynecology at the New York Post-Graduate Medical School and from 1906 to 1918 professor of surgery at the New York Polyclinic Medical School and Hospital. He had also been surgical director of New York City Children's Hospitals and Schools, surgeon at the New York Skin and Cancer Hospital, surgical director of the Manhattan State Hospital, Ward's Island, and consulting surgeon or gynecologist to some sixteen hospitals in and around New York City. He was one of the first men to lecture publically on cancer. He held six honorary degrees and was honorary fellow or member of numerous surgical and medical societies. He was the author of many medical papers and a widely translated book, The Cancer Problem.

Dr. Bainbridge introduced spinal analgesia in the United States and originated a method of administering oxygen in body cavities and sewing up the cavity with the gas retained for absorption. He also introduced a method of starvation ligature and lymphatic block operations for pelvic and abdominal malignancy in order to slow down the growth of cancer and to make it at times amenable to removal.

Another field in which Dr. Bainbridge pioneered was that of transplanting glands from animals to humans and human to human. He invented a number of surgical instruments and developed an improved operating table.

His contribution to his country during the period of both World Wars was far above and beyond the call of duty.

Together with medical officers of the Belgian Army, Dr. Bainbridge organized the International Congress of Military Medicine and Pharmacy.

Kindly, brilliant, a medical man in the grand old tradition, William Seaman Bainbridge is mourned by all who knew him.

LETTER FROM BRITAIN

(From Our Own Correspondent)

There are two matters in this country, (though not alone two) which are unsettling: the scarcity of nurses and the large number of old and elderly people. The lack of nurses is the most imminently disturbing as it affects laymen and medical men. It is serious and shows few signs of betterment. Some hospitals have had to close some of their wards at a time when their services are needed urgently. As is well known, nursing suffers mainly because it was for many years an underpaid and overworked profession with many restrictions, too great and too much discipline. It was a deep devotion and a profound sense of duty and vocation which induced young women to take it up as a career. At the present time conditions in all professions and trades have altered or are altering. Although a nurse's life is easier, hours shorter and pay much better, the young woman of today prefers employment in which she works at stated daily and weekly times, for better wages and with no restrictions, that is, when work is finished she can do what she likes.

The old and elderly people are a very large number here, out of proportion to the general population. How to care for the old, especially for those with little or no money is a very difficult problem to solve, even partially. The Government is taking the matter in hand to some extent. County and local authorities are making efforts in the same direction and a number of persons with money are exerting themselves to make the declining years of the old comfortable and peaceful, or at any rate to ensure them enough to eat and reasonable warmth and comfort.

Society of Medical Officers of Health

The annual meeting of the English Medical Officers of Health was held in London recently. It was a centenary occasion. Sir Allen Daley, who presided, called it the annual festival of backroom boys. Among those present were Mr. Aneurin Bevan, Minister of Health, the chief medical officer, the presidents of the Royal Colleges of Physicians and of Surgeons, of the British Medical Association, of the Women's Medical Association, Chairman of the Midwives' Board and the Professor of Public Health at Harvard Medical School. Mr. Aneurin Bevan in his address said in part that the Government was trying to lay down the principles of a health service which would gain the admiration of the world and support of Britain. Sir Allen Daley, the president, said in part that no steps should be taken during the next six months which would be difficult to retrace. The medical officer of health of the future must be supported by good hospital and general practitioner service. What the hospitals needed most was an adequate supply of efficient nurses.

British Royal Society

The annual report of this Society shows 875 fellows and members.

International Conference of Physicians

The above conference was held in London recently.

Esperantist Scientific Association

The British Esperantist Association has been formed to promote the practical application of Esperanto in science, medical science and technology.

Medical Superintendents' Society

This Society met in Birmingham on June 13 when Dr. D. Campbell Suttie, medical superintendent of the Hospital for Sick Children, Glasgow, was instated as president.

Tuberculosis Educational Institute

The above institute recently held a refresher course on the bacteriology and pathology of tuberculosis. Among the speakers were Sir Howard Florey, F. R. S., Dr. Robert Cruickshank, Miss Honor Fell, D. S. C., Dr. Jethro Gough, Dr. D. Barron Cruickshank, Dr. S. R. Gloyne and Dr. E. Nassau.

Franklin Medal for 1947

Sir Robert Robinson president of the Royal Society, and Dr. Enrico Fermi have been awarded the Franklin Medal for 1947.

St. George's Hospital London Medical School

The Slater Research Fellowship in bacteriology has been awarded jointly to Dr. J. N. Marshall Chalmers and Dr. E. Levy.

Old People in Britain

Unfortunately at least in some ways, old persons preponderate in Britain and provide a problem the solution or even partial solution of which is beset with difficulties of one kind or another. Philanthropists, indeed all thinking men and women, are cudgelling their brains to find means to relieve the situation. Mr. B. Seebohm Powntree, chairman of the Nuffield Foundation Committee of Inquiry into the problems of ageing and care of old people addressed the British Federation of Social Workers in London recently on this subject. In referring to the special needs of old people placed first the greatly increased provision of nursing care. The scarcity of nurses by the way is another serious pending problem here. For example in the Rhondda Valley, Wales there is one district nurse for a population of 30,000. Another pressing need is the institution of clubs to mitigate the loneliness of old people, especially old men. Perhaps the greatest evil of old age is not infirmity but loneliness.

George Eastman Visiting Professor

Professor Linns Rawling, professor of chemistry, California Institute of Technology has been appointed George Eastman visiting professor in University of Oxford for Trinity-Hilary terms.

Too Much Specialism

Sir Lionel Whitby, regius professor of Physics at Cambridge University, in a paper published recently in the *Lancet* gives his opinion that too much specialism leads to unintelligent general medicine and asks whether our general practitioners of the future, will become no more than sorters of cases.

Consumption of Medicine by British Poor

Consumption of medicine is higher by far among the poorer people in Britain. It is said that the purchase tax on drugs and medicines has become practically a working class tax.

Speech Defects Amongst Children

Moor Hurst School, Surrey, the first school in Britain, for children with defective speech, was opened on June 28, by the Minister of Education, Mr. G. Tomlinson. The house occupied by the school was bought by the West End Hospital, London, with funds raised from voluntary sources. Sir Harold Gillies in 1943 had advised the Ministries of Health and Education to introduce intensive speech training for children who had been operated for hare lip and cleft palate. Although originally intended for such children the school now admits also aphasic children unable to speak but not deaf. Mr. Tomlinson at the formal opening said that local education authorities required a further one hundred and fifty speech therapists for the seventy-five to one hundred thousand children needing treatment.

Experts on Safety First on the Roads

It was in the United States that "safety first" first became the slogan of the streets and roads. This country is now following in precautionary measures. Air Vice Marshall J. R. Cassidy, organizer of road safety for Gloucestershire, is planning to achieve his objective along somewhat unusual lines. Five out of the seventeen persons known to be killed each day as the result of road accidents in England are children. The highest casualty rate is among children under twelve with the peak just before school age while the lowest pedestrian casualty rate is among young people in their teens. Vice Marshall Cassidy has, therefore, called upon these young experts to educate their juniors in safety tactics. Road accidents cost the country £100 million ($500 million) yearly. It is pointed out that dazzle is the greatest enemy of the careful driver and that a car driven on a good road at 30 miles an hour will travel 75 feet between the time the driver decides to pull up and the time the car comes to rest.

It is said that stricter regulations will be enforced to prevent pedestrians as far as possible from endangering their own lives and those of other persons by careless crossing.

Modern Care of Old People

The above problem and measures for its solution or partial solution are being discussed by experts in the pages of the *Lancet*. Six of such articles have been published already. Steps have been taken in many parts of Britain to provide suitable accomodation for the various grades of old and elderly persons in accordance with their means or lack of means.

Acute Anterior Poliomyelitis

Perhaps, somewhat misnamed as infantile paralysis, although it most frequently occurs in young children. Many cases of this disease are present in Britain at the time of writing. Indeed it is prevalent in various parts of the country. There never has been an epidemic here. The cases are among young children.

British Journal of Nutrition

Had it not been for the war, the British Nutrition Society would have published a journal dealing with the scientific aspects of nutrition. In lieu of this the Society's *Proceedings,* in which reports of the Society's conferences on practical problems of nutrition are recorded at length, was founded in war time. In bringing out this publication the Nutrition Society had the help and support of the Royal College of Physicians in the person of its president, Lord Moran. Now, however, the Cambridge University Press will produce a quarterly journal, *British Journal of Nutrition,* devoted to the publication of original work on nutrition in all its branches. The 5th volume of the *Proceedings,* therefore, is the last to be published separately. In future the *Proceedings* will be merged in the new journal, the first number of which is scheduled for early publication.

Royal Society Empire Scientific Conference

The Royal Society has published a preliminary report of its Empire Scientific Conference, June-July 1946, which includes the speeches at the opening ceremony and lists of the morning discussions of the papers prepared for the Conference by the delegates. Some outstanding problems in medical science were dealt with, including the physiologic and psychologic factors affecting human life under tropical conditions and in industry, and the etiology and control of infections and transmissible diseases, especially those which are insect-borne. An instructive part of the conference was that which discussed the present state of the science of nutrition with particular reference to the special problems of the British Empire including the nutritional status of the indigenous peoples of the colonies. There were discussions on the natural products of the British Empire and the chemical industries which are or might be based on them as well as on the post-war needs of fundamental research. The latter revealed a particular shortage in the British Commonwealth of scientific workers in such fields as taxonomy, genetics and microbiology.

Book Reviews

Pneumoperitoneum

Pneumoperitoneum Treatment. By Andrew L. Banyai, M. D., associate clinical professor of medicine, Marquette University Medical School, Milwaukee, Wis. With 74 illustrations. St. Louis: The C. V. Mosby Co., 1946. Pp. 376. Price $6.50.

The author introduces his subject by an extensive historical review of its development. Pneumoperitoneum as a therapeutic procedure has been known to the medical profession for over fifty years. In the early days of its employment it was used in the treatment of tuberlous peritonitis only. During the past decade therapeutic pneumoperitoneum has been gaining increasing recognition in this country, South and Central America, Europe and Asia, in the treatment of emphysema, bronchial asthma, pulmonary abscess, pulmonary hemorrhage, and particularly on its employment in the treatment of tuberculous peritonitis and enterocolitis, of pulmonary tuberculosis, and in a number of other conditions which are discussed in detail in the chapter on the miscellaneous applications of this method.

Pneumoperitoneum is a technically simple and safe procedure. The author gives full directions for the technic so that every physician with average manual dexterity should be able to give this treatment. There are chapters on the physiological changes and peritoneal changes following pneumoperitoneum. There is a full discussion of the dangers and complications of this procedure, including visceroptosis, air embolism, accidental pneumothorax, mediastinal emphysema, and certain other minor complications.

The second section of the book discusses the therapeutic applications of this method. In abdominal conditions, these include tuberculous peritonitis and enterocolitis, in certain non-tuberculous affections of the large bowel, in gastrointestinal disturbances of pulmonary tuberculosis, phrenic nerve interruption, artificial pneumothorax, and in gastrointestinal hemorrhage. In chest conditions, these include bronchitis, broncho-pneumonia and pleurisy. There are additional chapters on the treatment of tubercular empyema, pulmonary abscess, bronchial asthma, bronchiectasis, pulmonary emphysema and pulmonary hemorrhage of non-tuberculous origin. There is also a chapter on the treatment of tuberculous salpingitis. Indications and contraindications are included as well as full descriptions of the method of action, mechanism and of the results of treatment.

The book is well illustrated with abundant photographs, there is a voluminous bibliography and a sufficient index. Certainly a wide variety of subjects are included. The format is pleasing and attractive.

Elements

Trace Elements in Plants and Animals. By Walter Stiles, M. A., Mason Professor of Botany, the University of Birmingham. Illustrated. New York: The Macmillan Co., 1946. Pp. xi+189. Price $2.75.

The development of our knowledge of the part played by the trace elements, micro-nutrients and minor elements — chemical elements which are essential for the lives of plants and animals in extremely small quantities,— has been acquired during approximately the last twenty years. Nevertheless, many observations have been made, much experimental work has been carried out in both field and laboratory, and hundreds of publications, in many cases of considerable scientific and economic importance, have appeared. The presentation of a digest of this information at this time makes available in convenient form, the present position of our knowledge of trace elements in living organism.

The book contains an historical introduction. The next section describes the various methods for investigating micro-nutrient problems. (Subsequent sections take up the functions of trace elements and the deficiency diseases of plants produced by insufficient amounts of manganese, zinc, boron, copper and molybdenum.) These problems are of special interest to the plant physiologist and pathologist, to the agriculturist, horticulturist and veterinarian. It seems, however, that much more is definitely known of the plant pathological aspect of the trace elements than of their physiological functions.

The following section discusses this subject as applied to animals. In addition to the well known indispensable elements, it is known that copper is also present as well as manganese, cobalt, nickel, etc. Pathologically, these are shown in various conditions, such as alkali disease (selenium poisoning) in horses, cattle, pigs and poultry; scouring disease (molybdenum poisoning) of cattle; "licking" sickness occurring in Holland (copper deficiency), and "salt lick" (copper and iron deficiency) found in cattle in Florida and in lambs in Great Britain; perosis, a manganese deficiency condition of chicks; and a condition known by various names (pining, enzootic marasmus, bush sickness or Morton Mains disease) due to cobalt poisoning and rather widely distributed. Reference is made to the relevancy of these conditions to human pathology, iodine deficiency being particularly mentioned as well as manganese deficiency which seems to have important relations to vitamin B_1 utilization. Physiologically, iodine, manganese, copper, zinc and cobalt seem to be essential for the human economy.

The book is well written and opens up new vistas for research, applicable to, and important for, human beings. Every investigator should be acquainted with its contents. As usual the publishers have turned out a very nice book.

Pathology

Surgical Pathology. By WILLIAM BOYD, M. D., Dipl. Pysch., M. R. C. P. Ed., professor of Pathology, The University of Toronto, Canada. Sixth edition. 530 illustrations with 22 color figures. Philadelphia and London: W. B. Saunders Co., 1947. Pp. 858. Price $10.00.

This is a sixth edition and a welcome one. Much that is new has been added to our knowledge in the intervening years, much that has been learned during the war. Entirely new is the chapter on the congenital cardiac disease dealing with physiology and physio-pathology. There are also new items of interest on alryngeal tumors, aritaminosis in oral cancer, Bittner's milk factor in mammary cancer, a new diagnostic procedure for carcinoma of the cervix and, of extreme importance, a complete presentation of fibrositis of the back, a common enough ailment about which we know too little.

Psychology

The Mass Psychology of Fascism. By WILHELM REICH, M. D. Translated from the German manuscript by THEODORE P. WOLFE, M. D. Third edition, revised and enlarged. New York: Orgone Institute Press, 1946. Pp. xxiv+344. Price $4.50.

Doctors have traditionally remained aloof from the political scene, but in times like these physicians have found it to their own advantage to take a vital interest not only in local and national politics, but also in foreign affairs. Who in the profession can help but take a stand for or against government medicine, health plans of various types, and current fee practices? What Battalion surgeon can forget the sanguine sights that were commonplace in combat? These are just a few factors which jar the physician from his former state of isolation from all things that had nothing to do with therapy. The only doctors who applied their field to politics have been the psychologists and psychiatrists. It is true that often they have not been any too clear in their statements and Dr. Reich is no exception, but at least his book is a beginning.

The author has developed three "layers" of the "biopsychic structure" which is merely another way of paraphrasing some of Freud. This is the great fault of many books on the mind. They are prone to invent their own nomenclature. It seems that psychiatry would make a great advance if a standard nomenclature would be adopted. Of course, this is easier said than done. Dr. Reich postulates that these three layers have an effect on political structure and concludes that Facism can only be overcome by the natural organization of work, love, and knowledge, on an international scale.

The author's interpretation that "fascist mysticism is orgastic longing under the conditions of mystication and inhibition of natural sexuality" is difficult for this reviewer to concede. However, interesting concepts stimulate the reader —Goebbel's use of the mother fixation tie when he states that the homeland is the mother of one's life; the concept of "national narcissism" by the identification of the mass individual with the "Fuhrer"; the fascist idea of the function of women; are all worth reading. The discussion on the "race theory" is well done.

Throughout the book sex in all its connotations is used to build up the author's theory. For example, the swastika is claimed by Dr. Reich to symbolize two intertwined human beings in a sex act.

This reviewer feels that the economic factors of society play a greater role in the development of facism than sexual repression.

Pulmonary Disease

Diseases of the Chest: with Emphasis on X-Ray Diagnosis. By ELI H. RUBIN, M. D., F.A.C.P., F.C.C.P., attending physician, Division of Pulmonary Diseases, Montefiore Hospital and County Sanatorium, New York; visiting physician in Tuberculosis and physician-in-charge, Chest Clinic, Morrisania City Hospital, New York. 355 illustrations and 24 color plates. Philadelphia and London: W. B. Saunders Co., 1947. Pp. 685. Price $12.00.

This book emphasizes the employment of x-rays in diagnosis of chest conditions but at no time fails to give ample consideration to other diagnostic means.

While the title speaks only of diagnosis, treatment of all conditions discussed is included. In addition there is a separate section of the book on The Principles of Surgical Treatment. This later section is written by Morris Rubin, while the diagnostic and medical treatments are presented by Eli H. Rubin.

We think this is an excellent volume. The approach is sound, practical and in no instance overburdened with vague theoretical consideration. In other words it is a book for the physician who is handling patients and not writing essays.

A wide field is covered. First the general technic of roentgenology from anatomical and technical view points. Then the Physiology of the Respiratory mechanism in health and disease, and finally the physiopathology of lung disorders.

Then we go on to a frank exposé of lung disorders. The various types of pneumonias, diagnosis and treatment, lung abscesses, infectious pulmonary diseases other than those caused by pneumococci. Then a separate consideration of chemical and physically caused pulmonary disorders. There is a very complete study and presentation on pulmonary tuberculosis.

Special diseases of the lungs and bronchi such as pneumoconiosis, bronchial obstruction, bronchiectasis, emphysima, cysts, asthma and neoplasius are all adequately covered.

One of the most valuable sections deals with combined heart and lung diseases.

The last part of the book deals with the basic principles of surgical treatment.

The illustrations in this book are splendid.

We consider this carefully balanced book of real value to the physician, student and radiologist.

SURGICAL DIGEST

By RICHARD A. LEONARDO, M. D.

Rochester, N. Y.

Penicillin for Tetanus L. Lewis studied fifteen cases of tetanus in which commercial penicillin was used as treatment and found this antibiotic to be ineffective.

Cancer of Cervix in Early Life According to Pollack and Taylor, it is to be emphasized that cancer of the cervix apparently has an increased tendency to occur in younger women than formerly. They list thirty cases in patients under twenty years of age. In twenty-two patients the histologic type was definitely adenocarcinoma.

Relapse Following Discontinuation of Thiouracil E. C. Bartels followed twenty-one cases of Graves' disease brought down to a normal metabolism by means of thiouracil, after which the drug was stopped. Eventually thirteen patients had a recurrence of their hyperthyroidism. The author expects the remaining eight patients, if followed long enough, to have relapses also.

Melena from Gall Bladder Disease Hudson and Johnson report four cases of hemorrhage into or from the gall bladder. One case was a hemangioendothelial sarcoma of the gall bladder and the other cases were due to scleroses of the vessels in the wall causing idiopathic hematocholecysts. The interesting point that the authors bring out is that in many anemic patients little consideration is given to the biliary system as a possible cause of the loss of blood, yet in reviewing one hundred consecutive cholelithiasis cases brought to operation, the authors obtained a positive history of melena in thirteen cases.

Renal Neoplasms C. M. Norfleet, Jr., feels that malignancy of the kidneys must be ruled out by a thorough urologic examination in all patients with persistent lumbar pains and aches of unknown origin, or with hematuria or a combination of these symptoms. In case of doubt, Norfleet feels a surgical exploration is justified because undue delay in diagnosis makes the condition inoperable and radiotherapy has so far proven ineffective. Prompt and complete nephrectomy, of course, is the recommended procedure and in cases diagnosed early, the prognosis is good and the expectation of a ten year cure (or one of longer duration) may be safely entertained in the average case.

Value of Thiouracil Himsworth *et al.*, compared results of subtotal thyroidectomy with thiouracil-treated cases and concluded there was no great difference between these two series of cases when interviewed three to thirty months later. Thiouracil, therefore, is worthwhile as an alternate treatment for thyrotoxicosis, but patients must be kept under medical observation.

Estrogenic Substance in Advanced Cancer of the Breast British authors reported favorable results in the treatment of elderly women, having inoperable or advanced breast cancer, with large doses of estrogen. Herriman *et al* repeated these experiments on seventeen women with advanced mammary cancer and also encountered favorable results, especially in women over sixty years of age. However, in menstruating women, these treatments made the breast cancer progress more rapidly.

Paget's Disease of the Bones F. Delitala reports one hundred and ten instances of this disease (osteitis deformans), in ten of which it was confined to only one vertebra. It is the author's opinion that the disease is probably of endocrine and sympathetic origin, although its true etiology is unknown. Clinically, these patients have enlargement of the skull, deafness, loss of teeth, deformities of the limbs, rheumatoid pains and asthenia. A small percentage of these cases undergo sarcomatous degeneration later.

Gross Intestinal Hemorrhage E. J. Donovan reports four such cases occurring in childhood and infancy in which the etiological factors were a Meckel's diverticulum, duplication of the terminal ileum, polyp of the descending colon, and a bleeding duodenal ulcer. It is especially important to remember the possibility of duplications of the small intestines when intra-intestinal hemorrhage occurs in the very young because such a congenital malformation very frequently contains heterotopic gastric mucosa which tends to ulcerate and bleed.

Primary Anastomosis for Cancer of Colon McNealy and Lands studied a selected series of thirty-four cases of cancer of the colon having resectable, non-obstructive lesions; and they feel that their method of resection and primary anastomosis (using the open method with two rows of interrupted sutures) is well justified. Only two deaths resulted and the avoidance of multiple operations, shortened hospitalization, reduced expenses, diminished psychologic trauma, etc., all speak in favor of adopting this routine. Proper pre- and postoperative preparation and treatment are of of the utmost importance.

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OCTOBER 1947

Medicolegal Notes

In Malpractise Actions Connection Between Acts or Failure to Act Must be Shown

Under Ohio law, to show malpractise, there must be a preponderance of the evidence showing that the injury complained of was caused by the doing of some particular thing or things that a physician, surgeon, dentist, or other practitioner, of ordinary skill, care and diligence, would not have done under like or similar conditions or circumstances, or by the failure or omission to do some particular thing or things that such practitioner would have done under like or similar conditions and circumstances, and that the injury complained of was the direct result of such doing or failing to do some one or more of such particular things.

This rule was applied by the Sixth Circuit Court of Appeals in a malpractise action by a patient against a dentist alleging negligence in leaving roots of extracted teeth in cavities. It was held that the evidence failed to show that an infection complained of was caused by the presence of such roots in the cavities. It was not sufficient merely to show that a general condition of inflammation in the patient's mouth followed by illness. The patient had had several teeth extracted a year before the extractions performed by the defendant, and the medical testimony was to the effect that it was impossible to say how long the root fragments had been in the defendant's gums. Pollack vs. Dussourd, 158 F. 2d 969.

Distinction Made Between Negligent Acts and Wilful Acts

In Bergen v. Rubenfeld, 66 N. Y. S. 2d 895, the New York City Court, Special Term (Oct. 23, 1946) held that counterclaims alleging that the plaintiff, through positive, willful and malicious acts, caused the defendant to become nervous, sick and upset, necessitating medical and legal advice, stated a cause of action for damages, as against a motion to dismiss.

The plaintiff cited the Mitchell v. Rochester Railway Co. case and a recent Special Term case, Kaufman v. Israel Zion Hospital, 183 Misc. 714, 51 N. Y. S. 2d 412, as authority for his contention that the counterclaims did not constitute a cause of action. The court, however, said: "In both of these cases the real gravamen of the charge was negligence, and they both held generally that mental suffering or disturbance, in the absence of accompanying physical or corporeal injury would not give rise to a recovery if it resulted from negligent or careless acts as distinguished from one that is willful. In subsequent cases, however, the courts have placed a limitation upon this general rule to the effect that where the acts complained of were willful and malicious, mental suffering might be a subject of compensation. The acts of the plaintiff complained of by the defendant in her counterclaims were not acts of negligence or carelessness but positive, willful and malicious and are therefore the basis for the causes alleged by the defendant."

The acts alleged in the Bergen case were that plaintiff made certain false representations to the defendant and thereby obtained her signature to a binder agreement whereby she became liable to sell her property to a third party, and that plaintiff at various times attempted to induce defendant to violate the terms of an exclusive agency and so alleged actions of plaintiff and another in furtherance of a conspiracy to obtain money from the defendant, and that these actions were calculated to and were done for the purpose of, harassing, annoying and instilling fear in the defendant in order that she would pay additional sums over and above the commission agreed upon.

In both counterclaims the defendant contended that she became nervous, sick and upset and was compelled to and did seek medical advice and treatment, as well as legal advice and that as a result thereof she was damaged.

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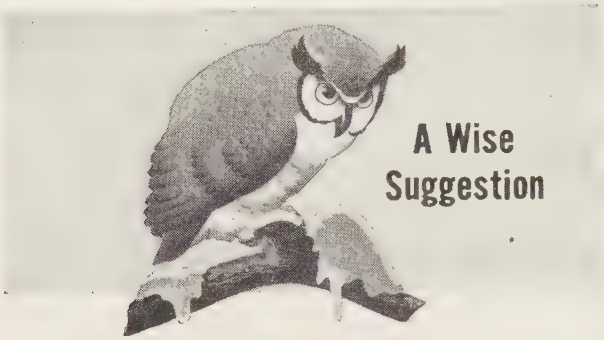

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New Cancer Treatment

Following a year's research with laboratory animals and clinical results with one hundred and fifty men, Dr. Clyde L. Deming, clinical professor of urology, Yale University School of Medicine, has found that when large, massive doses of the female hormone estrogen are given, human prostatic cancer diminishes in size more rapidly and the patient responds more dramatically than when small doses are given.

On the basis of his research and clinical evidence, Dr. Deming advocates a dosage 10 to 20 times the original amount, given in tablet form at the earliest date after cancer has been discovered. In 80 percent of the cases treated in this manner, there was relief from pain as well as a temporary arresting of cancer growth and a prolongation of life for at least two years. Many heretofore bedridden patients were able to resume normal activity at home and work after hormonal treatment.

The research at Yale was made possible by funds provided by the Connecticut State Cancer Society and took place in the laboratories of the departments of Surgery and Pathology. Dr. Deming, who is vice-president of the American Association of Genito-Urinary Surgeons, was assisted by Dr. Michael S. Hovenanian, resident in urology, in his experimental work.

The medical reasoning behind the advocacy of large doses of hormones is based on research which shows that after long periods of treatment, hormones lose their deterring effect upon prostatic cancer.

In determining how the hormones act on prostatic cancer, the Yale researchers worked for one year with guinea pigs.

For the first time in the history of medicine they succeeded in growing a cancer of the human prostate gland successfully in animals through eleven generations without using any synthetic cancer agents or selecting strains of animals particularly susceptible to cancer growth.

Up to the eighth generation, prostatic cancer would grow only in male guinea pigs, while in the ninth, tenth and eleventh generations, both male and female animals accepted and grew human prostatic cancer in about forty percent of the transplants.

This provided evidence that prostatic cancer can become tolerant to the female hormone, or can gain resistance to the hormone, and therefore may not yield to it in human patients. Clinical experience backed up this assumption.

In the laboratory work, a section of the human cancer was transplanted by the Yale investigators to the anterior chamber of the eyes of guinea pigs. This enabled the surgeons to see the cancer actually growing.

As an important by-product of his work, Dr. Deming has proven that it is possible to grow cancer in successive generations of animals chosen at random rather than from cancer-susceptible groups.

Deficiency Disease-- in a Land of Plenty!

Though America is prosperous beyond the dreams of less fortunate countries, many recent studies indicate that early and latent forms of scurvy are surprisingly common in many parts of this land of plenty.

As you well know, Doctor, everyone requires a minimal intake of vitamin C every day, but even hearty eaters often fail to get it from their diets. The surest way to see that your patients get their daily requirement is to prescribe SODASCORBATE, the *improved* vitamin C.

SODASCORBATE provides the only dry form of sodium ascorbate for oral administration. SODASCORBATE is stable, approximately neutral in chemical reaction and free from the irritative and acid-shift effects frequently experienced with ordinary ascorbic acid.

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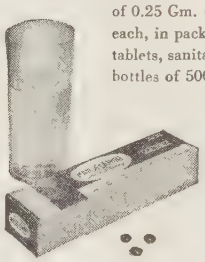
Mandelamine is supplied in enteric coated tablets of 0.25 Gm. (3¾ grains) each, in packages of 120 tablets, sanitaped, and in bottles of 500 and 1000.



Mandelamine, a highly efficient urinary antiseptic, is virtually nontoxic in effective therapeutic dosage. This remarkable lack of toxicity, as established and confirmed in a number of authoritative clinical studies, facilitates therapy and eliminates the necessity for careful selection of patients. Its safety and ease of therapy make Mandelamine especially suitable for administration to children, during pregnancy, and in stubborn or inoperable cases where therapy is necessarily prolonged. The only major contraindication to Mandelamine therapy is renal insufficiency. A physician's sample and literature will be sent on request.

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Microfilmed Books

Paralyzed and tubercular patients in Veterans Administration hospitals now may study educational courses while they are bedridden by flashing microfilmed pages of textbooks on the ceilings over their beds with special projectors. In the past, VA has used the process principally for entertainment purposes.

The new program is a feature of VA's Educational Retraining, Medical Rehabilitation Service, and is confined to tuberculosis hospitals and to paraplegia centers where veterans are being treated for spinal cord injuries that have caused paralysis.

VA has microfilmed thirty-two manuals from the two hundred courses used in the educational therapy program to launch this project. The subjects range from English grammar, books on the establishment and operation of small businesses.

As patients complete the study of a page projected on the ceiling, they turn the page by pressing a small button on the special bedside projector to throw a new page on the ceiling.

All VA tuberculosis hospitals and paraplegia centers have several copies of each text-film so that more than one veteran-patient may study the same subject at the same time. The films are kept in hospital libraries and may be drawn in the same manner as books.

Through this educational therapy program, veteran-patients may continue their studies either in regular classes or privately as part of their rehabilitation.

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Disorders of the Nervous System

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Fast Cure for Gonorrhea

A single dose of tablets, given in the treatment of gonorrhea, brought apparent cures in 34 of 36 cases. Complete information is available at the University of Virginia Hospital, the Virginia Academy of Science was informed at a meeting in Charlottesville, Va.

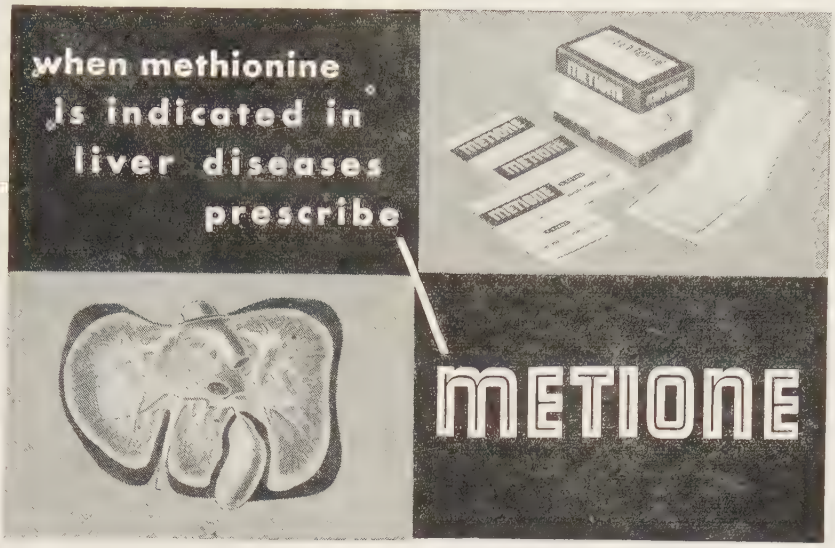
The curative drug used in the search for the ultimate in a cure for the disease, is penicillin, but with the addition of a "rather amazing" new chemical, 'Staticin' Caronamide, which makes the penicillin stay in the blood stream long enough to do the job, said Dr. Samuel A. Vest, head of the Urology Department, University of Virginia.

The new compound, still under clinical investigation, was developed by the Medical Research Division, Sharp & Dohme, Inc.

Penicillin has been recognized as the most effective medicine in the treatment of the disabling venereal disease. But its will-o-the-wisp character made repeated large doses—usually by hypodermic injection—necessary. The kidneys dissipated the penicillin in short order and repeat doses were the only means of keeping a good concentration in the body.

Dr. Vest explained that the treatment has been given by him and an associate, Dr. D. D. Merren, in dozens of cases at the University Hospital. In 34 of 36 patients that reported back the cures appeared absolute.

Dr. Vest added that he believed it would be only a matter of time before the long-sought treatment became generally prescribed.



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Whenever your diagnosis shows that methionine is indicated:—

- As a dietary supplement to prevent deposition of fat in the liver
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- In protecting the liver against nutritional deficiency and hepatoxic agents
- In repairing liver damage due to chloroform, carbon tetrachloride, insufficient protein intake or faulty protein utilization

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Literature Available

Physician's booklet "METHIONINE" —giving complete data and references— will be sent on request.

Dosage: The average adult dose is one packet of METIONE (2 grams) dissolved in a small amount of hot water, three times daily after meals. For children, one-half the contents of a packet three times daily. In acute cases of liver damage due to chloroform, carbon tetrachloride and other hepatoxic agents, larger doses up to 10 grams daily have been recommended for short periods. A high protein, high carbohydrate and low fat diet is recommended in conjunction with METIONE administration.

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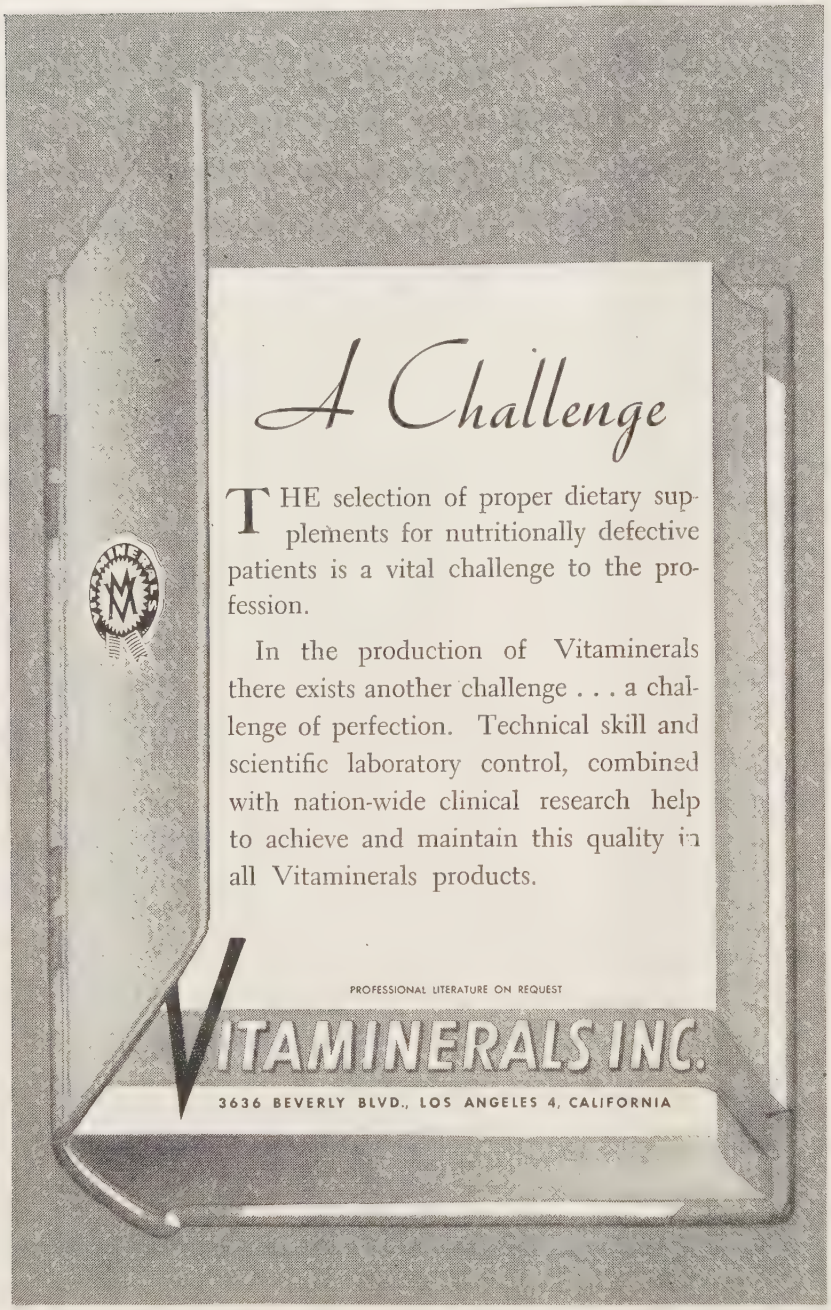
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Grants to Five Universities Announced

Seven research grants to five different universities have been announced by the Frederick Stearns & Co. Division, Sterling Drug Inc.

The grants provide for pharmacological, therapeutic, and organic chemistry investigations in antispasmodic, antiasthmatic, analeptic, analgesic and anesthetic compounds, as well as pharmacological research on sympathomimetic amines.

Three of the grants are to the University of Michigan, Ann Arbor. Two of these, covering organic chemistry research on antispasmodics, will be under the direction of Dr. F. F. Blicke. Dr. M. H. Seevers, of the department of pharmacology, University of Michigan Medical School, is supervising the third, which is concerned with pharmacological research on analgesics and anesthetics.

Other grants are to the division of Pharmacology and Experimental Therapeutics, University of California Medical School, San Francisco, supervised by Dr. Hamilton H. Anderson, on pharmacological research on antispasmodic, antiasthmatic and analeptic compounds; Department of Therapeutics, New York University College of Medicine, Dr. Robert C. Batterman, therapeutic research on antispasmodic compounds and anesthetics; Department of Chemistry, Indiana University, Bloomington, Indiana, Dr. E. Campaigne, organic research on intermediates for anti-spasmodic compounds;

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because it is
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• It aids in breaking the vicious circle of coughs that are uselessly irritating or unproductive.
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Supplied: In 4 oz., 16 oz., and half-gallon bottles.
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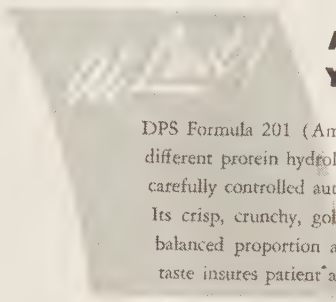
Department of Pharmacology, University of Georgia School of Medicine, Augusta, Georgia, Dr. Robert A. Woodbury, pharmacological research on antispasmodics.

United Medical Service

A total of 201,944 persons enrolled in United Medical Service during the first six months of 1947, as against 113,733 during the first six months of 1946, an increase of 88,211 or approximately 77 percent, Rowland H. George, president, announced today. The overall enrollment at the end of June 1947 was 607,688.

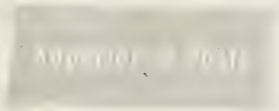
During the first six months of 1947, 19,845 medical bills totaling $898,093 were paid on behalf of UMS members as against 7,795 bills totaling $341,641 for the same period a year ago. Since the organization was founded three years ago 46,268 bills totaling $2,227,405 have been paid.

Of the 607,688 persons enrolled, 494,917 were covered by the surgical plan of UMS which provides specified payments up to $225 toward the physician's fee for surgical and maternity care in the hospital. A total of 88,735 persons subscribed to the surgical-medical plan which provides all the services of the surgical plan and, in addition, payments toward fees for medical care in the hospital. The general medical plan which provides all the benefits of the surgical-medical plan plus payments toward the doctor's fees for home and office visits had 24,016 persons enrolled.

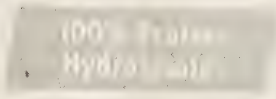


A PROTEIN HYDROLYSATE YOUR PATIENTS WILL ACCEPT

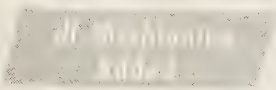
DPS Formula 201 (Amino Acid Supplement) is a brand new, advantageously different protein hydrolysate containing STREPOGENIN. It is prepared by the carefully controlled autolysis of a specially cultured strain of protein-rich yeast. Its crisp, crunchy, golden-sepia granules contain *all* the amino acids in well balanced proportion and readily available form. Its distinctive palate-pleasing taste insures patient acceptance.



The delightful "meaty" flavor of DPS Formula 201 blends with fruit or vegetable juices, with milk, or it may be added to sauces or gravies. When added to hot water it makes a delicious bouillon-like beverage. The variety of ways in which it may be administered increases patient acceptance.

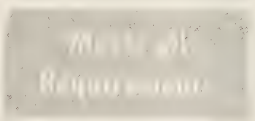


No calcium, lactose, malted milk, dextrose or other *fillers* have been added to increase bulk or decrease cost.

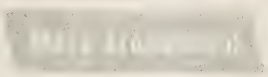


Methionine, one of the sulfur-containing amino acids, is important in certain detoxication systems and for the protection of the liver. Extra *dl*-methionine has been added to increase this protective action.

Careful control during hydrolysis insures the active presence of STREPOGENIN in DPS Formula 201. Woolley and others have shown that this unidentified fraction is important to growth. When animals were fed protein hydrolysates, identical except for the presence of strepogenin in one, the animals which received amino acid mixtures containing strepogenin showed weight gains 2½ times greater than those which did not receive this growth factor. DPS Formula 201 also contains large amounts of the B-Complex vitamins.



DPS Formula 201 meets all the requirements generally recognized as the desirable characteristics which a protein hydrolysate should possess: palatability, freedom from extraneous materials, well balanced amounts of the amino acids in readily available form—and in addition strepogenin.



DPS Formula 201 is more economical, too. This is an important consideration in protein supplementation.

Available in convenient 7-ounce jars.

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Research in Virus Diseases

Discovery by Army Medical Corps officers of two hitherto unknown virus diseases of man was announced by Dr. Joseph E. Smadel, Army Medical Department Research and Graduate School, in a Symposium at the Army Medical Center.

Virus diseases, caused by the most minute known organisms which are relatively highly resistant to any of the sulfa drugs or penicillin, are responsible for some of the most devastating human and animal maladies. These include influenza, poliomyelitis, parrot fever, and a host of others.

The first of the new diseases is encephalomyocarditis. The responsible virus was isolated from a dead chimpanzee at an Army Air Force hospital at Coral Gables, Fla., during the war. At that time no human cases were suspected.

The doctors found that this virus caused a rapidly fatal disease with a characteristic pattern in mice, hamsters, cotton rats and monkeys and and a non-fatal fever in guinea pigs and rabbits. In the fatal cases it attached the heart muscles, as does ordinary myorcarditis, and at the same time caused serious lesions in the brain. The brain attack was chiefly on the cortex of the cerebellum, the organ of balance.

The organism was shown to have no relationship to about twenty unknown human and animal viruses with which it was matched. A person who once has been infected with a virus disease developes antibodies in the blood which give some degree of protection against reinfection. No such antibodies were found in the blood of hospital patients.

The antibodies were found, however, in frozen blood samples from patients in a Manila Army Hospital in 1945. There had been no satisfactory diagnosis of these cases. It was recalled, however, that among troops in the Pacific there had been outbreaks of so-called three-day fever.

It now appears that at least some of these men suffered from encephalomyorcarditis without, however, the heart and brain involvements found in those animals to whom the malady is fatal. The disease in the soldiers may have existed only as a complication to some other malady.

The evidence to date indicates that while the disease affects man it is not very serious.

The other new virus malady, which also does not appear serious, is Fort Bragg fever.

Its characteristic symptoms are a brief fever and a rash found chiefly on the front of the legs. The virus has been isolated and is being studied.

Finding of some chemical substance which will be effective against viruses, especially the virus of influenza is one of the major goals of present medical research. Some progress has been made in this direction, Dr. Smadel reported. One drug which seems to inhibit temporarily the growth of flu virus is closely related to atabrine, the malaria-suppressive used on such a wide scale during the war. This particular drug would appear to have no practical value at present. During the past month Rockefeller Institute workers have reported that certain biological substances, such as apple pectin and certain blood substances, have an inhibitory effect in the flu virus.

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Tuberculosis Case Finding

According to Health News, the New York State Department of Health is promoting routine chest x-ray examinations of patients admitted to hospitals through the loan of complete equipment for making small x-ray films. Equipment is available for the use of Upstate New York hospitals which agree to conform to the State Health Department's tuberculosis program. At present only 16 state-owned x-ray units have been contracted for, some of which have been received. Because of the limited number at present the units will be loaned only to those hospitals having 7,000 or more admissions a year. When more units become available, the program will be extended to include hospitals with fewer annual admissions.

The objective of the program is to make an x-ray examination of each patient, 15 years of age and over, admitted to such a general hospital so that previously unknown cases of tuberculosis may be found. There is evidence, Commissioner Hilleboe stated, which indicates that the prevalence of active tuberculosis is greater in this group than in a non-selected group of the general population.

The chest x-ray examination of all hospital employees not previously examined and of all new employees is an important part of the program.

In order to stimulate participation and to help defray the cost of this new program, hospitals utilizing loaned equipment will be paid fifty cents for each report of an examination submitted.

Television In Medical Teaching

Television is ready now for use in instruction in the field of surgery, particularly if color telecasts can be made possible according to Dr. John H. Mulholland, Chairman of the Department of Surgery of the New York University College of Medicine. Lauding television instruction given to surgeons attending the American College of Surgeons Congress recently, Dr. Mulholland pointed out that whereas only one or possibly two surgeons could formerly observe an operation and get close enough to take away additional knowledge, the number of surgeons who can view an operation now depends only on the number of small screens or the size of a single large screen that television can provide. The larger the screen, the better the observation since more detail is brought out. Moreover, while black and white pictures have the one detracting quality of appearing flat, use of color in television would reveal to observing surgeons the quality of depth, thus multiplying the value of the telecasts many times.

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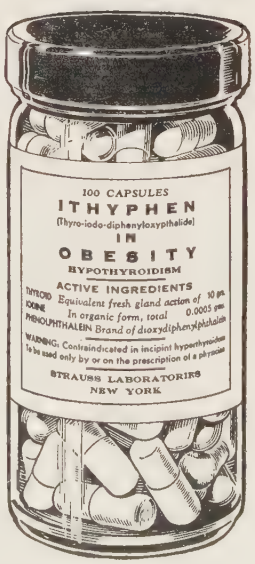

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NEW PRODUCTS

New Antacid Tablets

American Ferment Co., Inc., Trenton, N. J. and New York, N. Y., has announced the introduction of Al-Caroid Antacid in tablet form.

Al-Caroid Antacid Tablets contain the same active ingredients as Al-Caroid Antacid Powder, which has been on the market for the past 15 years. It is used for the symptomatic relief of gastric hyper-acidity, heartburn, flatulance, and as an adjunct in the treatment of peptic ulcers.

The tablet assures accurate dosage and is a more convenient form for the ambulatory patient. They will be packaged in bottles of 50 and 100.

Liquid Form of Dexedrine Sulfate

Smith, Kline & French Laboratories, Philadelphia 5, Pa., have introduced Dexedrine Sulfate Elixir—a new, highly palatable, *liquid* dosage form of Dexedrine Sulfate.

The Elixir is therapeutically identical with the tablets. Each 5 cc. (1 teaspoonful) supplies Dexedrine Sulfate (dextro-amphetamine sulfate, S. K. F.), Five (5) mg. Its indications are the same as for the widely prescribed tablets: depressive states; obesity; alcoholism; narcolepsy; postencephalitic parkinsonism; etc. It is available on prescription only in 6 fl. oz. bottles.

Antacid Product Announced

Resinat, a resin antacid, has been added to the line of products manufactured by the National Drug Company of Philadelphia.

A yellow, tasteless powder which is available in capsule form, Resinat belongs to the synthetic resin group of ion-exchange chemicals. It has the property of attracting the excess hydrochloric acid of the stomach. Thus bonded, it may be said to "accompany" the excess hydrochloric acid into the intestine. There, in an alkaline environment, it loses its attraction for the acid molecules which drop off and are then absorbed. The resin is then eliminated unchanged.

Chemically, the product is a polyethylene-polyamino methylene substituted resin of diphenyloldimethylmethane and formaldehyde in basic form. This inert plastic resin is purified and ground to particle size averaging 200 mesh in order to give it sufficient surface area to enhance its acid-absorbing qualities.

Clinically, it is effective in the treatment of peptic and duodenal ulcerations. It is rapid in its action, possessing great acid normalizing power and a specific capacity to inhibit pepsin activity. It controls symptoms of gastric hyperacidity without eructation, is nonconstipating, nontoxic, nonirritating and nonalkalinizing.

Recommended dosage in ordinary hyperacidity: one or two capsules which may be repeated as required. As a recommended regimen in acute peptic and duodenal ulcers, patients are given one or two capsules every two hours during the day. This suggested dosage may be increased as indicated. As in other forms of treatment, dietary restrictions should be enforced.

Resinat is supplied in gelatin capsules containing 0.25 Gm. each. Available in bottles of 50, 100, 500 and 1,000 capsules.

Cancer Research Aid

A new, simplified method of phase contrast microscopy that should prove invaluable in cancer, infantile paralysis research and bacteriology studies has been announced by Bausch & Lomb Optical Company, Rochester, N. Y.

Consisting of optical and mechanical accessories that can be easily fitted to a standard laboratory microscope as well as the more complex models, the revolutionary system was demonstrated recently at the National Cancer Institute in Washington, D. C.

It is believed that it will prove of distinct value in microscopic studies ranging from sewage disposal to atomic radiation research.

The new accessories consist of a special condenser assembly, a series of objectives ranging from 10- to 97-power magnification, and a miniature auxiliary telescope. Mounted in a rotatable turret to provide rapid change from lowest to highest magnification power, the objectives are fitted with a glass disc or phase plate with a ring-like elevation that corresponds to the diaphragm stops in the condenser. The ring-like surface portion of the phase plate is coated with magnesium fluoride, in addition to a film of inconel.

Penicillin in Aerosol Form

A new, simple, and effective method of combating respiratory infections by use of penicillin aerosols is offered by Premo Pharmaceutical Laboratories, Inc., New York 13, N. Y. This inhalation therapy—according to Dr. Alvin Barach of Columbia University College of Physicians and Surgeons, whose clinical tests were sponsored by Premo—is also indicated in infections caused by penicillin-sensitive organisms in general.

This inhalation therapy is a particular boon to sufferers of asthmatic, sinus and bronchial afflictions. A solution may be made by the patient anywhere with the convenient nebutab and nebulizer, which can be gotten on a physician's prescription. 50,000 units of penicillin can be inhaled in 2 or 3 minutes.

The effectiveness of the method is readily demonstrated in the fact that the blood level count after inhaling 50,000 units of nebulized penicillin is twice as high as that achieved by 100,000 units of penicillin swallowed by mouth. It has also attained blood levels comparable to hypodermic injection of penicillin.

The new nebutabs may be stored at room temperature for three years.

Antibiotic Throat Lozenges

Sharp & Dohme, Inc., Philadelphia have announced the national release of Tyrozets, antibiotic-anesthetic throat lozenges for treatment of mouth and throat infections.

The first tyrothricin lozenges to be distributed nationally, these have a pleasant taste which makes them acceptable to adults and children alike.

These new lozenges actively combat gram-positive throat infections. Pathogenic organisms commonly encountered in the oral cavity, pharynx and tonsillar bed are particularly sensitive to the antibiotic activity of tyrothricin. Prolonged contact at site of application permits penetration into minute tissue crevices of the infected area.

The lozenges are useful also following tonsillectomies. Anesthetic benzocaine in the formula soothes irritated tissues and relieves throat irritation. Each lozenge contains tyrothricin 1 mg. and benzocaine 5 mg.

Normal administration is one lozenge every 3 hours; more often if required. One lozenge, dissolved slowly in the mouth, provides a therapeutically adequate concentration of tyrothricin in the saliva.

Tyrozets are supplied in vials of 12 lozenges. Feature of the package is a new plyothene (plastic) closure.

Booklet on Digitoxin

Ladox Laboratories, Inc., Philadelphia and New York 13, N. Y., is issuing a new booklet on Digitoxin, describing the assay, pharmacology, doses and advantages of this product as used in cardiac diseases.

Digitoxin, 1,000 times more effective than powdered digitalis, is completely absorbed and gives a more rapid onset of action with a minimum of side effects, such as nausea and vomiting. A single digitalization dose is recommended because of its increased potency.

New X-ray Table

The Westinghouse Electric Corporation has announced a new x-ray table, the Duoflex, which features a target-to-patient distance for fluoroscopy increased to 18 inches; a motor-driven, rocker-type table; absence of table legs allowing closer viewing of fluoroscopic screen; improved screen mounting; new, convenient, simplified controls; greater Bucky travel; and reduced table-top-to-Bucky distance.

Powered by a large motor, the table backs up as it stands up to eliminate legs, moving smoothly from 12° Trendelenberg to vertical with an automatic stop at horizontal. Release of the foot treadle permits stopping at intermediate points without coasting.

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The development of Tri-Sulfanyl, a combination of Sulfathiazole, Sulfadiazine and Sulfamerazine in microcrystalline form, has been announced by Casimir Funk Laboratories, New York 17. It is the first nationally promoted triple sulfa mixture to be made available to the medical and pharmaceutical professions.

The formula of Tri-Sulfanyl tablets and syrup sharply retards supersaturation and precipitation in the urinary tract, reducing to a minimum the danger of crystalluria, which may occur during single sulfonamide therapy. At the same time the combined sulfas permit greater bacteriostatic activity.

Tri-Sulfanyl, which is supplied as a syrup and as tablets, is indicated in those conditions requiring treatment with Sulfathiazole, Sulfadiazine or Sulfamerazine.

Temperature Measuring System

Fairchild Camera and Instrument Corporation, Jamaica, N. Y., has announced a new Pneumatic Temperature Measuring System, for measurement and control of extremely high gas temperatures to 5,000 degrees, Reaumur. The instrument is a form of gas thermometer utilizing the density of the gas being measured as a direct indication of the temperature.

The system is not subject to the usual radiation effects common to present temperature sensing methods. It can be applied for temperature measurement and control wherever a small quantity of the high temperature gases to be measured or controlled can be continuously sampled.

Specified accuracies for these instruments are plus-or-minus 1 percent to 2,500 degrees R., and plus-or-minus 2 percent from 2,500 to 5,000 degrees R., with a response rate of ½-second or less.

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